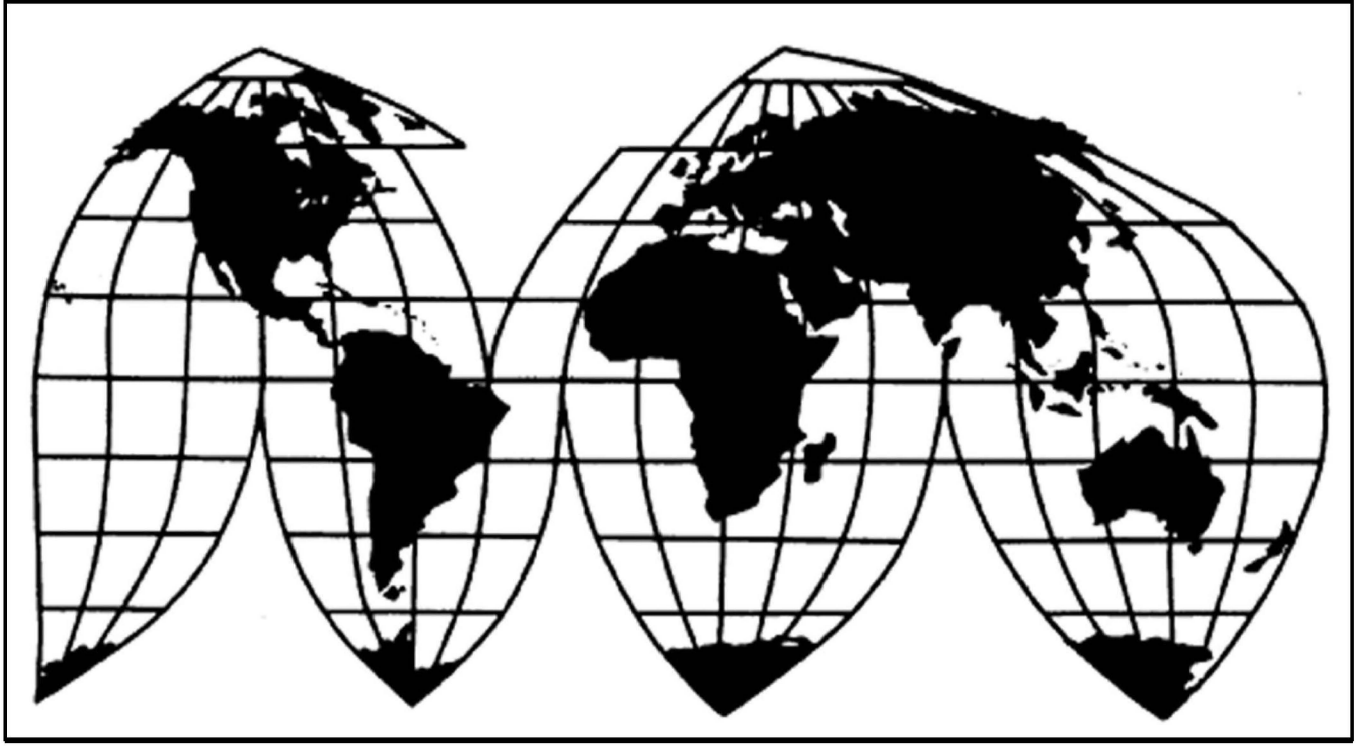
Granular Polytetrafluoroethylene (PTFE) Resin from India and Russia

Investigation Nos. 701-TA-663-664 and 731-TA-1555-1556 (Final)

Publication 5285 **March 2022**

U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-663-664 and 731-TA-1555-1556 (Final)

Granular Polytetrafluoroethylene (PTFE) Resin from India and Russia

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of granular polytetrafluoroethylene ("PTFE") resin from India and Russia, provided for in subheadings 3904.61.00 and 3904.69.50 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV"), and to be subsidized by the governments of India and Russia.[2] [3]

BACKGROUND

The Commission instituted these investigations effective January 27, 2021, following receipt of petitions filed with the Commission and Commerce by Daikin America, Inc., Orangeburg, New York. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of granular PTFE resin from India and Russia were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in

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[1] The record is defined in § 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

[2] 87 FR 3764, 87 FR 3765, 87 FR 3772, and 87 FR 3774 (January 25, 2022).

[3] The Commission also finds that imports subject to Commerce's affirmative critical circumstances determination are not likely to undermine seriously the remedial effect of the countervailing and antidumping duty orders on granular PTFE resin from India.

the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on September 15, 2021 (86 FR 51378). In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted its hearing through written testimony and videoconference held on January 19, 2022. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of granular polytetrafluoroethylene ("PTFE") resin from India and Russia found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value and subsidized by the governments of India and Russia. We also find that critical circumstances do not exist with respect to imports of granular PTFE resin from India that are subject to Commerce's final affirmative critical circumstances determinations.

I. Background

Daikin America, Inc. ("Daikin"), a U.S. producer of granular PTFE resin, filed the petitions in these investigations on January 27, 2021.[1] Representatives of Daiken and The Chemours Company FC LLC ("Chemours"), also a U.S. producer (collectively, "Domestic Producers"), appeared at the hearing accompanied by counsel, and submitted joint prehearing and posthearing briefs and final comments.[2]

Two respondent entities participated in these investigations. Gujarat Fluorochemicals Limited ("GFL"), an Indian producer and exporter of granular PTFE resin; and HaloPolymer Kirovo-Chepetsk, LLC and HaloPolymer Perm, OJSC, joint companies producing and exporting granular PTFE resin in Russia and HaloPolymer Trading, Inc., a U.S. importer of granular PTFE resin ("HaloPolymer") (collectively, "Respondents"), appeared at the hearing accompanied by counsel, and submitted joint prehearing and posthearing briefs and final comments.[3]

U.S. industry data are based on the questionnaire responses of six firms that accounted for all known domestic production of granular PTFE resin in 2020.[4] U.S. import data are based

[1] Confidential Report, Memorandum INV-UU-008 (Feb. 4, 2022), as amended by Memoranda INV-UU-011 (Feb. 8, 2022) and INV-UU-014 (Feb. 15, 2022) ("CR") and Public Report, USITC Pub. 5285 (Mar. 2022) ("PR") at I-1.

[2] In light of the restrictions on access to the Commission building due to the COVID-19 pandemic, the Commission conducted its hearing through written witness testimony and videoconference held on January 19, 2022, as set forth in procedures provided to the parties. *Granular Polytetrafluoroethylene (PTFE) Resin From India and Russia; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations,* 86 Fed. Reg. 51378 (Sept. 15, 2021).

[3] A witness from Industrial Plastics & Machine, Inc. ("Industrial Plastics"), a U.S. purchaser of granular PTFE resin, also appeared at the hearing on behalf of Respondents.

[4] CR/PR at III-1. These firms include two integrated granular PTFE resin producers, Daikin and Chemours, and four compounders of granular PTFE resin, AGC Chemicals Americas, Inc. ("AGC"), Flontech USA LLC ("Flontech"), GFL Americas LLC ("GFL Americas"), and 3M Company ("3M").

on official Commerce import statistics and the questionnaire responses of 12 U.S. importers that are believed to have accounted for the vast majority of imports of granular PTFE resin from India and Russia and approximately *** percent of granular PTFE resin imports from nonsubject sources in 2020.[5] Foreign industry data and related information are based on the questionnaire response of one producer/exporter of granular PTFE resin in India accounting for approximately *** percent of granular PTFE resin production in India in 2020 and virtually all U.S. imports of subject merchandise from India in 2020,[6] and the questionnaire response of one producer/exporter of granular PTFE resin in Russia accounting for approximately *** percent of granular PTFE resin production in Russia in 2020 and virtually all U.S. imports of subject merchandise from Russia in 2020.[7]

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[8] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[9] In turn, the Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[10]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[11]

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[5] CR/PR at I-4.

[6] CR/PR at VII-3.

[7] CR/PR at VII-10.

[8] 19 U.S.C. § 1677(4)(A).

[9] 19 U.S.C. § 1677(4)(A).

[10] 19 U.S.C. § 1677(10).

[11] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States,* 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[12] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[13] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[14] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[15] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[16]

[12] *Cleo Inc. v. United States,* 501 F.3d 1291, 1298 (Fed. Cir. 2007); see also *Hitachi Metals, Ltd. v. United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Cir. 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[13] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748–52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[14] *See, e.g., Cleo Inc. v. United States,* 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States,* 19 CIT 450, 455 (1995); *Torrington Co. v. United States,* 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), aff'd, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon,* 19 CIT at 455 n.4; *Timken Co. v. United States,* 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[15] *See*, *e.g.*, S. Rep. No. 96-249 at 90-91 (1979).

[16] *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; *see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

B. Product Description

Commerce defined the scope of the imported merchandise under investigation as:

> . . . granular polytetrafluoroethylene (PTFE) resin. Granular PTFE resin is covered by the scope of this investigation whether filled or unfilled, whether or not modified, and whether or not containing co-polymer, additives, pigments, or other materials. Also included is PTFE wet raw polymer. The chemical formula for granular PTFE resin is C_2F_4, and the Chemical Abstracts Service (CAS) Registry number is 9002-84-0.
>
> Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by filling, modifying, compounding, packaging with another product, or performing any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the granular PTFE resin.
>
> The product covered by this investigation does not include dispersion or coagulated dispersion (also known as fine powder) PTFE.
>
> PTFE further processed into micropowder, having particle size typically ranging from 1 to 25 microns, and a melt-flow rate no less than 0.1 gram/10 minutes, is excluded from the scope of this investigation.[17]

Granular PTFE resin is a crystalline polymer sold as a powder and commonly known as Polyflon™, a registered trademark of Daikin, and Teflon®, a registered trade name of Chemours.[18] Granular PTFE resin is used for various applications due to its chemical inertness, heat and chemical resistance, low friction and electrical insulation properties, and functionality over a wide temperature range (-40°C to 260°C).[19] Granular PTFE resin is one of four forms of

[17] *Granular Polytetrafluoroethylene Resin From India: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances,* 87 Fed. Reg. 3772 (Jan. 25, 2022); *Granular Polytetrafluoroethylene Resin From India: Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination*, 87 Fed. Reg. 3765 (Jan. 25, 2022); *Granular Polytetrafluoroethylene Resin From the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value,* 87 Fed. Reg. 3774 (Jan. 25, 2022); *Granular Polytetrafluoroethylene Resin From the Russian Federation: Final Affirmative Countervailing Duty Determination*, 87 Fed. Reg. 3764 (Jan. 25, 2022).

[18] CR/PR at I-11.

[19] CR/PR at I-11-12.

PTFE, with the others being dispersion, coagulated dispersion, and micropowder. The scope of these investigations includes only granular PTFE, and expressly excludes the other three forms of PTFE (*i.e.*, dispersion, fine powder, and micropowder).[20]

All forms of PTFE are made from tetrafluoroethylene ("TFE"), a volatile chemical, which is then polymerized to produce PTFE.[21] Granular PTFE resin is produced through suspension polymerization which yields a repeating chain of TFE.[22] After polymerization, wet polymer PTFE is cut to achieve the desired particle size, agglomerated, dried, and ground.[23] Granular PTFE resin is typically processed to form stock shapes, which can then be machined into products such as gaskets, diaphragms, corrosion-resistant lining, piping components, and lab equipment.[24]

"Filled" PTFE refers to PTFE that is compounded with additives including, but not limited to, carbon, graphite, glass fiber, stainless steel, bronze, aromatic polyester, or pigments. Filling PTFE can enhance its mechanical properties, such as resistance to abrasion.[25]

C. Arguments of the Parties

Domestic Producers' Arguments. Chemours and Daikin argue that the Commission should define a single domestic like product, coextensive with Commerce's scope, as it did in its preliminary determinations.[26]

Respondents' *Arguments*. Respondents did not address the definition of the domestic

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[20] *See* CR/PR at I-8 and I-12-13. Micropowder PTFE is a dried PTFE product, produced by dispersion polymerization, and the particle sizes are generally larger than granular PTFE resin. Dispersion PTFE is produced by dispersion polymerization that suspends the PTFE particles, resulting in a white solution. Coagulated dispersion (also referred to as fine powder) PTFE is also produced through dispersion polymerization and undergoes the additional steps of agglomeration, separation, and drying to produce the fine powder product. CR/PR at I-12-14, 19.

As noted above, the scope in these investigations includes only granular PTFE resin and expressly excludes other forms of PTFE resin, which, along with granular PTFE resin, were within the scope of the 2018 investigations concerning *Polytetrafluoroethylene Resin from China and India,* Inv. Nos. 701-TA-588 and 731-TA-1392-1393 (Final), USITC Pub. 4801 (July 2018).

[21] CR/PR at I-15 and n. 62, I-19.

[22] CR/PR at I-19.

[23] CR/PR at I-19.

[24] CR/PR at I-3.

[25] CR/PR at I-14.

[26] Domestic Producers' Prehearing Br. at 3-4.

like product in the final phase of these investigations.[27]

D. Analysis

In its preliminary determinations, the Commission found that all domestically produced granular PTFE resin within the scope has the same basic chemistry and physical properties, is produced to the same ASTM specifications, and uses the same manufacturing facilities, production processes, and employees.[28] It found that in-scope granular PTFE resin is sold through the same channels of distribution, primarily to end users.[29] The available information indicated that all granular PTFE resin within the scope generally is used in the same applications and is interchangeable to some degree, and that customers and producers perceive all in-scope product as comprising a single product category, though there are some variations in pricing.[30] Based on the foregoing, and in light of the limited scope of the investigations covering a single form of PTFE, the Commission defined a single domestic like product coextensive with the scope.[31]

In the final phase of these investigations, there is no new information in the record concerning the characteristics of the product at issue that indicates the Commission should reconsider its definition of the domestic like product.[32] Therefore, and in the absence of arguments to the contrary, we define the domestic like product as granular PTFE resin, coextensive with Commerce's scope.

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[27] In the preliminary phase, GFL did not object to Daikin's proposed domestic like product definition but suggested that the Commission should consider in any final phase of the investigations defining the domestic like product more broadly to encompass two other forms of PTFE (fine powder PTFE and dispersion PTFE) that are excluded from the scope definition. GFL Postconf. Br. at 1-3, 8-9, and 12. No respondent party, however, requested data collection for a like product analysis in comments on the draft questionnaires in the final phase of these investigations. HaloPolymer's Comments on Draft Questionnaires, EDIS Doc. 744576 (June 11, 2021).

[28] *Polytetrafluorethylene Resin from India and Russia,* Inv. Nos. 701-TA-663-664 and 731-TA-1555-1556 (Preliminary), USITC Pub. 5174 (Mar. 2021) ("Preliminary Determinations") at 10.

[29] Preliminary Determinations, USITC Pub. 5174 at 10.

[30] Preliminary Determinations, USITC Pub. 5174 at 10.

[31] Preliminary Determinations, USITC Pub. 5174 at 10-11.

[32] *See* CR/PR at I-11-23.

III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[33] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

These investigations raise two separate domestic industry issues. The first concerns whether further processing of granular PTFE resin (compounding) constitutes sufficient production-related activities to include compounders in the definition of the domestic industry.[34] The second concerns whether appropriate circumstances exist to exclude any U.S. producers from the domestic industry pursuant to the related parties provision.

A. Sufficient Production-Related Activities

In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[35]

In the preliminary phase of these investigations, the Commission found, based on the limited information in the record, that compounders were engaged in sufficient production-related activities to qualify as domestic producers. It found that compounders' capital investment was not insubstantial and also cited the compounders' levels of employment, which was comparable to PTFE production, the high value added by compounders' processing

[33] 19 U.S.C. § 1677(4)(A).

[34] Compounders purchase granular PTFE resin, mix it with other substances, and sell the blended product in the commercial market. CR/PR at I-3 n.7.

[35] The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012), *aff'd, Changzhou Trina Solar Energy Co. v. USITC,* 879 F. 3d 1377 (Fed. Cir. 2018).

operations, the high degree of technical expertise that appeared to be required for compounding operations, and compounders' appreciable sourcing of domestically produced granular PTFE resin as an input.[36]

1. Arguments of the Parties

Domestic Producers' Arguments. Domestic Producers argue that the Commission should define the domestic industry as consisting solely of the two integrated U.S. granular PTFE resin producers, Chemours and Daikin, and exclude compounders.[37] According to Chemours and Daikin, the startup capital investment for a granular PTFE resin facility (which they estimate at $***) is substantially higher than that required for a compounding operation (for which they cite a range of ***).[38] They argue that granular PTFE resin production is more technically complex, including that it requires safety training to mitigate explosion risks, and highlight that compounders rated the complexity level of their operations *** than Chemours and Daikin rated their own complexity level.[39]

Respondents' Arguments. Respondents maintain that compounders are part of the domestic industry.[40] However, they did not specifically address the issue of sufficient production-related activities.

1. Analysis

Source and Extent of Firm's Capital Investment. Chemours' and Daikin's combined annual capital expenditures ranged from $*** to $*** during 2018-2020, whereas compounders' annual capital expenditures ranged from $*** to $***.[41] Chemours and Daikin *** R&D expenses during 2018-June 2021; compounders' annual R&D expenses ranged from $*** to $*** from 2018 to 2020.[42] Chemours' and Daikin's net assets for PTFE production

[36] Preliminary Determination, USITC Pub. 5174 at 13-14.

[37] Domestic Producers' Prehearing Br. at 4; Domestic Producers' Posthearing Br. at Answers to Commissioner Questions, pp. 59-62.

[38] Domestic Producers' Prehearing Br. at 4-5.

[39] Domestic Producers' Prehearing Br. at 5.

[40] Respondents' Prehearing Br. at 53 n.178.

[41] CR/PR at Table VI-5. Startup operations for granular PTFE resin requires capital investment of around $50 million to $100 million, whereas a compounder could start operations for around $1 million. CR/PR at I-20 n.81 (*citing* Conference Tr. at 38-39 (Rubin)). Chemours' and Daikin's total capital expenditures from 2018-June 2021 were $***; compounders' total capital expenditures were $***. *Derived from* Table VI-5.

[42] CR/PR at Table VI-7.

ranged from $*** to $*** from 2018 to 2020 while the four compounders reported net assets ranging from $*** to $*** for their compounding operations over the same period.[43]

Technical Expertise. Granular PTFE resin production involves the production of TFE, ***.[44] By contrast, PTFE compounding is a blending operation that begins with PTFE, does not involve a chemical reaction, and ***.[45] Hourly wages paid to PRWs engaged in compounding activities were comparable to or somewhat higher than the hourly wages paid to PRWs engaged in PTFE production during most years of the January 2018-June 2021 period of investigation ("POI").[46]

Value added to the product in the United States. The value added by Chemours and Daikin in granular PTFE resin production ranged from *** percent of the total costs of goods sold ("COGS") during 2018-2020; the value added by granular PTFE resin compounding operations ranged from *** percent.[47]

Employment Levels. The number of production related workers ("PRWs") involved in granular PTFE resin production at Chemours and Daikin was *** in 2018, *** in 2019, *** in 2020, *** in January-June 2020 ("interim 2020"), and *** in January-June 2021 ("interim 2021").[48] The number of PRWs involved in granular PTFE resin compounding operations was *** in 2018, *** in 2019, *** in 2020, *** in interim 2020, and *** in interim 2021.[49]

Quantity and type of parts sourced in the United States. Compounders sourced granular PTFE resin from domestic, subject, and nonsubject sources during the POI.[50] They purchased between *** percent and *** percent of their granular PTFE resin from domestic sources, between *** percent and *** percent from subject sources, and between *** percent and *** percent from nonsubject sources during 2018-2020.[51] Integrated U.S. producers procure

[43] CR/PR at Table VI-9.

[44] *See* CR/PR at I-15 and Table D-7 (Daikin's narrative response).

[45] CR/PR at I-20. *See also* CR/PR at App. D (narratives of compounders' production operations). Both integrated producers and most compounders reported that their production process was on the higher end of the complexity range. CR/PR at Table III-4.

[46] *Compare* CR/PR at Table III-24 with Table III-25. Hourly wages for employees of Chemours and Daikin were *** per hour in 2018, 2019, 2020, and January-June 2021, respectively. Hourly wages for PTFE compounding employees were *** per hour in 2018, 2019, 2020, and January-June 2021, respectively.

[47] CR/PR at Table III-5 (cited range for compounders excludes ***).

[48] CR/PR at Table III-24.

[49] CR/PR at Table III-25.

[50] CR/PR at Table III-9. Granular PTFE resin accounted for the majority of U.S. compounders' raw material costs in 2020. CR/PR at VI-13.

[51] CR/PR at Table III-9.

substantial raw material inputs from non-domestic sources, but subsequently produce intermediate inputs, such as TFE, domestically.[52]

Conclusion. We find that compounders engage in sufficient production-related activities to constitute domestic production. While the initial investment for compounders' processing operations was significantly lower than that for granular PTFE resin production by Chemours and Daikin, compounders' capital expenditures over the POI were significant relative to integrated producers' expenditures, and R&D expenses and net assets assigned to granular PTFE resin operations were higher for compounders. In addition, the degree of technical expertise required for compounders' processing operations, albeit less complex than the technical expertise required for granular PTFE resin production by Chemours and Daikin, appears to be substantial. The value added by compounding is also substantial. The number of PRWs in granular PTFE resin compounding is substantially greater than the number of PRWs in granular PTFE resin production by Chemours and Daikin. Compounders also sourced appreciable amounts of PTFE from domestic sources. Although the data are mixed, we find that the record indicates that compounders engage in sufficient production-related activities to be considered producers of the domestic like product and part of the domestic industry.

B. Related Parties

We next determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[53] Exclusion of such a producer is within the Commission's

[52] *See* CR/PR at VI-11-14. The integrated producers were not able to provide definitive estimates of the amount of domestic raw materials used in PTFE production. CR/PR at Table III-5 note.

[53] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem*., 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

discretion based upon the facts presented in each investigation.[54]

Three U.S. producers, *** are subject to potential exclusion pursuant to the related parties provision because they each imported subject merchandise during the POI. In addition, *** is related to a U.S. importer of subject merchandise and *** is related to an *** exporter of subject merchandise.[55] [56]

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[54] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015), *aff'd*, 879 F. 3d 1377 (Fed. Cir. 2018); see *also Torrington Co. v. United States*, 790 F. Supp. at 1168.

[55] CR/PR at III-3 n. 3, III-20, and Table III-2.

[56] Although U.S. producers *** each purchased subject imports from importers during the POI, neither qualifies as a related party. A domestic producer shall be considered to be a related party if it directly or indirectly controls an exporter, importer, or third party. 19 U.S.C. § 1677(4)(B). A domestic producer that does not itself import subject merchandise or does not share a corporate affiliation with an importer may nonetheless be deemed a related party if it controls large volumes of subject imports. *See* SAA at 858. The Commission has found such control to exist, for example, where the domestic producer's purchases were responsible for a predominant proportion of an importer's subject imports and the importer's subject imports were substantial. *See, e.g., Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-248, 731-TA-262-263, 265 (Fourth Review), USITC Pub. 4655 at 11 (Dec. 2016); *Chlorinated Isocyanurates from China and Spain*, Inv. Nos. 731-TA-1082-1083 (Second Review), USITC Pub. 4646 at 12 (Nov. 2016).

*** purchases of subject imports *** were *** pounds in 2018 and *** pounds in 2019. CR/PR at Table III-19. *** also purchased *** pounds of subject imports from Russia in 2019 from importer ***. *Id*. *** purchases accounted for *** percent of *** subject imports in 2018 and *** percent in 2019; its purchases accounted for only *** percent of *** subject imports in 2019. *Id.* We find that *** purchases were insufficient for it to qualify as a related party.

*** also reported purchasing subject imports from India and Russia during the period of investigation from ***. ***'s U.S. Producer Questionnaire (Final) at II-13 and CR/PR at Table IV-1. ***'s reported purchases of subject imports from Russia were *** pounds in 2018. CR/PR at Table III-17. ***'s reported purchases of subject imports from India were *** pounds in 2018, *** pounds in 2019, *** pounds in 2020, *** pounds in interim 2020, and *** pounds in interim 2021. *Id.* ***'s purchases accounted for only *** percent of *** imports of Russian product in 2018 and only *** percent of *** imports of Indian product in 2018, *** percent in 2019, *** percent in 2020, *** percent in interim 2020, and *** percent in interim 2021. *Id*. We find that *** purchases were insufficient for it to qualify as a related party.

1. Arguments of the Parties

Domestic Producers' Arguments. Chemours and Daikin argue that appropriate circumstances exist to exclude *** as a related party.[57] They contend that *** has accounted for *** domestic production ***.[58] Moreover, they argue that ***' compounding production in 2018 was ***.[59] Accordingly, Chemours and Daikin argue that *** primary interest during the POI was in importation of subject merchandise.[60]

Respondents' Arguments. Respondents did not address the issue of related parties.

2. Analysis

As explained below, we find that appropriate circumstances exist to exclude *** from the definition of the domestic industry but appropriate circumstances do not exist to exclude ***.

****.* *** is the *** integrated U.S. producer of granular PTFE resin, accounting for *** percent of 2020 integrated U.S. production.[61] ***, imported subject merchandise from Russia.[62]

*** imported subject merchandise only during 2020 and interim 2021, and its imports were equivalent to *** percent of its domestic production in 2020 and *** percent in interim 2021.[63] *** imports from Russia were equivalent to *** percent of *** domestic production in 2018, *** percent in 2019, and *** percent in 2020 (*** percent when combined with *** own imports).[64] *** states that these imports are primarily ***.[65]

As the *** and a large domestic producer of granular PTFE resin, ***'s primary interest appears to lie in domestic production and not in importation. *** U.S. production exceeded its own volume of subject imports and its affiliate's subject imports throughout most of the POI. Moreover, no party argues that *** should be excluded from the domestic industry. In light of

[57] Domestic Producers' Prehearing Br. at 6.

[58] Domestic Producers' Prehearing Br. at 6-7.

[59] Domestic Producers' Prehearing Br. at 7.

[60] Domestic Producers' Prehearing Br. at 7.

[61] CR/PR at Table III-1.

[62] CR/PR at Tables III-2 and III-20.

[63] CR/PR at Table III-20. Daikin imported *** pounds of granular PTFE resin from Russia in 2020 and *** pounds in interim 2021. *Id.*

[64] CR/PR at Table III-20. *** U.S. production was *** pounds in 2018, *** pounds in 2019, *** pounds in 2020, *** pounds in interim 2020 and *** pounds in interim 2021. ***'s subject imports from Russia were *** pounds in 2018, *** pounds in 2019, and *** pounds in 2020. *Id.*

[65] CR/PR at Table III-23.

the foregoing, we find that appropriate circumstances do not exist to exclude *** from the domestic industry as a related party.

****.* *** is a U.S. compounder that imported subject merchandise during the POI. *** accounted for *** percent of reported domestic production of compounded granular PTFE resin in 2020.[66] It *** the petitions.[67] *** reported importing *** pounds of subject imports from India in 2018 and did not import subject merchandise for the remainder of the POI.[68] Its ratio of subject imports to domestic production was *** percent in 2018.[69] *** reported substantial capital expenditures and R&D expenses during the period of investigation.[70] *** primary interest appears to lie in domestic production and not in importation. In light of the foregoing, and particularly given that *** only imported a relatively small volume of subject merchandise in one year of the POI, we find that appropriate circumstances do not exist to exclude *** from the domestic industry as a related party.

****.* *** is a *** U.S. compounder that ***.[71] ***.[72] ***.[73] It imported *** pounds of subject merchandise from India in 2018, *** pounds in 2019, *** pounds in 2020, *** pounds in interim 2020, and *** pounds in interim 2021.[74] Its ratio of subject imports to domestic production was *** percent in 2018; thereafter it ***. The volume of its subject imports in 2018 far exceeded its domestic production and, as ***, the volume of its subject imports remained substantial for the remainder of the POI, during which it was ***.[75] Therefore, *** primary interest appears to have been in the importation of subject merchandise. Accordingly, we find that appropriate circumstances exist to exclude *** from the domestic industry as a related party.

In sum, we define the domestic industry to consist of all integrated producers and compounders of granular PTFE resin, with the exception of ***.

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[66] CR/PR at Table III-1.

[67] CR/PR at Table III-1.

[68] CR/PR at Table III-21.

[69] CR/PR at Table III-21.

[70] ***'s reported capital expenditures were $*** in 2019 and $*** in 2020; its reported research and development expenses were $*** in 2018, $*** in 2019, $*** in 2020, $*** in interim 2020, and $*** in interim 2021. CR/PR at Tables VI-5 and VI-7.

[71] CR/PR at Tables III-1 and III-2.

[72] CR/PR at Table III-1.

[73] CR/PR at Table III-1; ***' U.S. Producer Questionnaire (Final) at I-4.

[74] CR/PR at Table III-22.

[75] CR/PR at Tables III-22, III-23, and IV-1; IV-3 n.3.

IV. Cumulation[76]

For purposes of evaluating the volume and effects for a determination of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[77]

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[76] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). The United States Trade Representative ("USTR") no longer designates India to be a developing country subject to the 4 percent negligibility threshold for countervailing duty investigations. *See* Designations of Developing and Least-Developed Countries Under the Countervailing Duty Law, 85 Fed. Reg. 7613, 7615-16 (USTR Feb. 10, 2020).

During the most recent 12-month period preceding the filing of the petitions in these investigations, January 2020 through December 2020, questionnaire response data indicate that subject imports from India accounted for *** percent of total granular PTFE resin imports, and subject imports from Russia accounted for *** percent of total granular PTFE resin imports. CR/PR at Table IV-4. Because imports for all investigations were above the negligibility threshold, we find that imports from each subject country are not negligible for purposes of both the antidumping and countervailing duty investigations.

[77] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd, Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[78] Only a "reasonable overlap" of competition is required.[79]

A. Arguments of the Parties

Domestic Producers' Arguments. Chemours and Daikin argue that the Commission should cumulatively assess subject imports from India and Russia for purposes of present material injury.[80] They contend there is a high degree of fungibility among and between the domestic like product and imports from each subject country.[81] They argue that granular PTFE resin from each subject country and the domestic like product were present in the same channels of distribution and sold primarily to end users.[82] They also argue that granular PTFE resin from all sources was sold in all regions within the continuous United States, and that subject imports from India and Russia and the domestic like product were present in the U.S. market in every month from January 2018 to September 2021.[83]

Respondents' Arguments. Respondents do not argue against cumulation for present material injury.[84]

B. Analysis

As an initial matter, Daiken filed the antidumping and countervailing duty petitions on the same day, January 27, 2021.[85] In addition, we find a reasonable overlap of competition among subject imports from both subject countries, and between subject imports from each source and the domestic like product, for reasons described below.

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[78] *See*, *e.g.*, *Wieland Werke, AG v. United State*s, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[79] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy, S.A. v. United States*, 678 F. Supp. at 902; *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[80] Domestic Producers' Prehearing Br. at 8.

[81] Domestic Producers' Prehearing Br. at 8.

[82] Domestic Producers' Prehearing Br. at 9.

[83] Domestic Producers' Prehearing Br. at 10.

[84] *See* Respondents' Posthearing Br. at Exh. 1, pp. 34-35.

[85] None of the statutory exceptions to cumulation apply.

Fungibility. The record in the final phase of these investigations indicates that granular PTFE resin is at least moderately fungible, regardless of source. Granular PTFE resin is generally produced to or advertised as meeting ASTM standard D 4894, and may also meet other industry standards that detail several technical specifications for granular PTFE resin.[86] The subject imports and domestic product overlap in many of these product specifications.[87]

Both integrated U.S. producers indicated that product from all sources were frequently interchangeable.[88] Importers also indicated that granular PTFE resin from domestic and subject sources were interchangeable to some degree, with Russian product being somewhat less so with product from other sources. A majority of importers (eight of 10) reported that domestic product and Indian product were frequently or sometimes interchangeable; and all importers reported that Indian and Russian product were frequently or sometimes interchangeable.[89] Comparing domestic product to Russian product, a majority of importers (six of nine) reported such granular PTFE resin was frequently or sometimes interchangeable[90]

Most responding purchasers reported that domestically produced and Indian granular PTFE resin were frequently or sometimes interchangeable (eight of 11) and that domestically produced and Russian product (five of nine) were always or frequently interchangeable; most responding purchasers (six of eight) reported that subject imports from Russia and India were always or frequently interchangeable.[91] Additionally, a plurality of responding purchasers indicated that domestic and Indian product were comparable on 13 of 16 factors and indicated that Indian and Russian product were comparable on 16 of 16 factors, while a plurality of purchasers indicated that U.S. and Russian product were comparable on only 8 of 16 factors.[92]

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[86] *See* CR/PR at I-20 and Table I-7. Specifications for granular PTFE resin include particle size, bulk density, water content, melting peak temperature, maximum thermal stability index, specific gravity, minimum tensile strength, and minimum percent elongation at break. U.S. producers Daikin and Chemours and Indian producer GFL state they use the international ASTM standard D 4894. Russian producer Halopolymer lists multiple standards, which include internal company standards, the Russian State Standard, DSC, and ASTM D 4894. *Id*.

[87] *See* CR/PR at I-20 and Table I-7. The record also shows overlap in product type: the majority of U.S. importers' shipments of subject imports from Russia (*** percent, *** pounds) and *** percent of shipments of subject imports from India (*** pounds) were uncompounded granular PTFE resin in 2020, while integrated U.S. producers reported *** pounds of uncompounded U.S. shipments and compounders reported *** pounds of compounded U.S. shipments that year. CR/PR at Tables IV-7 and III-11.

[88] CR/PR at II-21 and Table II-12.

[89] CR/PR at Table II-13.

[90] CR/PR at Tables II-13.

[91] CR/PR at Table II-14.

[92] CR/PR at Table II-11.

More specifically, with respect to customer specifications, product quality meeting industry standards, product quality exceeding industry standards, product range, and product consistency, half or more purchasers reported that the imports from each subject country and the domestic product were comparable in all comparisons.[93] Additionally, the record indicates that of 18 responding purchasers, five reported purchasing subject imports from India instead of the domestic like product and four reported purchasing subject imports from Russia instead of the domestic like product since 2018.[94]

Channels of Distribution. The domestic like product was sold predominantly to end-users during the POI, with smaller quantities sold to distributors and compounders.[95] Subject imports from India and Russia were also sold predominantly to end users during the POI, with smaller quantities sold to compounders.[96] Consequently, a large majority of each year's shipments of granular PTFE resin from domestic producers, subject imports from India, and subject imports from Russia were sold to end users.

Geographic Overlap. During the POI, integrated U.S. producers reported selling granular PTFE resin to all regions of the United States and importers reported selling granular PTFE resin in all regions of the contiguous United States, although no importer reported sales of Russian product to the Mountains region.[97]

Simultaneous Presence in Market. Subject imports from India and Russia and the domestic like product were present in the U.S. market throughout the POI.[98]

Conclusion. The record indicates that the domestic like product and imports from each subject source overlap in terms of channels of distribution, geographic markets, and presence in the U.S. market. That overlap together with the degree of fungibility reviewed above is sufficient to satisfy the likely reasonable overlap standard. In light of the foregoing, we find a reasonable overlap of competition between the domestic like product and imports from each subject country and among imports from each subject country. We consequently analyze

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[93] *See* CR/PR at Table II-11.

[94] CR/PR at V-15.

[95] *See* CR/PR at Table II-1. The share of integrated U.S. producers' U.S. shipments sold to end users during the POI ranged from *** percent to *** percent; the share sold to distributors ranged from *** percent *** percent; and the share sold to compounders ranged from *** to *** percent. *Id.* *** of compounders' U.S. shipments were sold to end users during the POI. *Id.*

[96] CR/PR at Table II-1. The share of subject imports from India sold to end users ranged from *** percent to *** percent during the POI. The share of subject imports from Russia sold to end users ranged from *** percent to *** percent during the POI. *Id.*

[97] CR/PR at Table II-2. Subject imports from India and Russia were not sold in the region consisting of Alaska, Hawaii, Puerto Rico, and the U.S. Virgin Islands. *Id.*

[98] *See, e.g.,* CR/PR at Tables III-10, III-11, IV-9, V-3, and V-4.

subject imports from India and Russia on a cumulated basis for our analysis of whether there is material injury by reason of subject imports.

V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of cumulated subject imports of granular PTFE resin from India and Russia.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[99] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[100] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[101] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[102] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[103]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[104] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[105] In identifying a

[99] 19 U.S.C. §§ 1671d(b), 1673d(b).

[100] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[101] 19 U.S.C. § 1677(7)(A).

[102] 19 U.S.C. § 1677(7)(C)(iii).

[103] 19 U.S.C. § 1677(7)(C)(iii).

[104] 19 U.S.C. §§ 1671d(b), 1673d(b).

[105] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[106]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[107] In performing its examination, however, the Commission need not isolate

[106] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

[107] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

the injury caused by other factors from injury caused by unfairly traded imports.[108] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[109] It is clear that the existence of injury caused by other factors does not compel a negative determination.[110]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports."[111] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other

[108] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e*., it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[109] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[110] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

[111] *Mittal Steel*, 542 F.3d at 876 &78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

sources to the subject imports." [112] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[113]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[114] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[115]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

1. Demand Considerations

Demand for granular PTFE resin is driven by demand for the downstream products in which it is used, such as gaskets, seals, bearings, films, tapes, and micropowder.[116] Domestic producers reported that demand for these downstream products generally increases or decreases with the level of economic activity in the United States.[117] Due to a limited range of substitute products for granular PTFE resin, and the varying share of the cost of the end-use

[112] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[113] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

[114] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[115] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[116] CR/PR at II-8.

[117] CR/PR at II-8.

products in which it is used, demand for granular PTFE resin is relatively price inelastic.[118]

Most market participants reported that U.S. demand for granular PTFE had increased or fluctuated since January 1, 2018.[119] The record indicates that the COVID-19 pandemic caused demand to decline in 2020, and that it began to recover in interim 2021.[120] Apparent U.S. consumption decreased by *** percent from 2018 to 2020, decreasing from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; it was higher in interim 2021, at *** pounds, than in interim 2020, at *** pounds.[121]

2. Supply Considerations

The domestic industry consists of two integrated U.S. producers — Chemours (the ***

[118] CR/PR at II-8, II-12, II-25. One of two responding U.S. producers, seven of nine importers, and 13 of 15 purchasers reported that there were no substitutes for granular PTFE. *** and importer *** reported that silicone and other plastics products could be used in select applications. Purchaser *** noted perfluoroalkoxy (PFA) and fine powder PTFE were substitutes. *Id.* at II-12.

Purchasers' reported end-use cost shares of granular PTFE resin ranged from less than 10 percent to more than 90 percent, including, for example, 65 percent in electronics, 20-25 percent in tapes, 45-90 percent in seals, and 33 percent in lined steel pipe. *Id.* at II-8.

[119] CR/PR at Table II-5.

[120] *See* Hearing Tr. at 76 (Rubin), 152-53 (Bhatnagar), 245-46 (Arlati) and 246 (Newbury).

[121] CR/PR at Table C-2. By value, apparent U.S. consumption decreased by *** percent from 2018 to 2020, decreasing from $*** in 2018 to $*** in 2019 and $*** in 2020; it was $*** in interim 2020 and $*** in interim 2021.

When measuring U.S. shipments, apparent U.S. consumption, and market shares, we primarily rely on the quantity of U.S. shipments of uncompounded granular PTFE resin, notwithstanding that this approach excludes the U.S. shipments of compounders. *See* CR/PR at Table C-2 note. As compounders use domestically produced and imported granular PTFE resin in their production, this approach will avoid double counting these shipments. This approach is consistent with the Commission's methodology in past cases in which the domestic industry included both upstream producers and downstream processors, and was applied by Respondents in their submissions to the Commission in the current investigations. *See* Respondents' Posthearing Br. at Exh. 1, pp. 33-34 (citing *Thermal Paper from Germany, Japan, Korea, and Spain,* Inv. Nos. 731-TA-1546-1549 (Final) USITC Pub. 5237 (Nov. 2021)); *Polytetrafluoroethylene Resin from China and India*, Inv. Nos. 701-TA-588 and 731-TA-1392-1393 (Final), USITC Pub. 4801 (July 2018) at 25, 28, 32-33 (applying same methodology). Therefore, while we have also considered the value of shipments, we find that quantity data better reflect the U.S. market as subject imports primarily consisted of uncompounded product that competed with the domestic industry's shipments of uncompounded product. Subject imports were comprised of *** percent uncompounded product in 2020. CR/PR at Table IV-7. Similarly, all of the integrated U.S. producers' shipments were of uncompounded PTFE resin in 2020.

domestic producer) and Daikin — and three compounders.[122] U.S. integrated producers' annual production capacity increased from *** pounds in 2018 to *** pounds in 2019, after Daikin expanded its Decatur, Alabama facility;[123] their capacity was lower in 2020 (*** pounds) than in 2019 due to ***, and was steady at *** pounds in interim 2020 and interim 2021.[124] The capacity utilization rate of the integrated U.S. producers decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[125]

The domestic industry's share of apparent U.S. consumption declined from 2018 to 2020, from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; its share of apparent U.S. consumption was higher in interim 2021, at *** percent, than in interim 2020, at *** percent.[126]

Cumulated subject imports' share of apparent U.S. consumption increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was lower in interim 2021, at *** percent, than in interim 2020, at *** percent.[127]

Nonsubject imports' share of apparent U.S. consumption decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 than in interim 2020, at *** percent and *** percent, respectively.[128] The largest sources of nonsubject imports during the POI were China and the Netherlands.[129]

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[122] CR/PR at Table III-1. Integrated producers produce granular PTFE resin and may also compound it; compounders process granular PTFE resin into compounded granular PTFE resin. CR/PR at I-3 n.7. In 2020, *** percent of integrated U.S. producers' U.S. shipments were of uncompounded product. CR/PR at Table IV-7.

[123] CR/PR at Tables III-3 & III-6 and III-3 & III-8 n.11.

[124] CR/PR at Table III-6 and III-8 n.11. Compounders' production capacity was constant throughout the POI, at *** pounds from 2018-2020 and *** pounds in interim 2020 and 2021. CR/PR at Table C-2.

[125] CR/PR at III-6. Compounders' capacity utilization rate decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021. CR/PR at Table C-2.

[126] CR/PR at Table C-2. By value, the domestic industry's share of apparent U.S. consumption declined from *** percent in 2018 to *** percent in 2019, and then increased to *** percent in 2020; it was higher in interim 2021, at *** percent, than in interim 2020, at *** percent. *Id*.

[127] CR/PR at Table C-2. By value, cumulated subject imports' share of apparent U.S. consumption increased from *** percent in 2018 to *** percent in 2019, and then decreased to *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021. *Id.*

[128] CR/PR at Table C-2. By value, nonsubject imports' share of apparent U.S. consumption decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021, at *** percent, than in 2020, at *** percent. *Id.*

[129] CR/PR at II-6.

Purchasers reported that supply constraints in the U.S. granular PTFE resin market affected both domestic and imported supply during the POI.[130] Seven of 18 responding purchasers reported that they had experienced supply constraints from January 1, 2018, to January 27, 2021, and 11 of 18 reported supply constraints since the petitions were filed.[131] Chemours reported ***. Daikin reported that ***,[132] ***. Daikin and Chemours also reported that ***.[133] Prior to the petitions being filed, U.S. purchaser *** reported that Chemours and Daikin had issues fulfilling orders due to limited production capacity, while *** reported supply issues with respect to a U.S. importer and *** reported issues with both domestic and Indian suppliers. Purchasers *** reported that, since the petitions were filed, domestic producers have been unable to fulfill their demand for the product. Purchasers *** reported tight global supply and *** reported that the pandemic disrupted both domestic and imported supply.[134] Despite comments concerning the domestic industry's supply constraints, nine of 10 purchasers reported that the domestic producers' reliability of supply was superior or comparable to subject imports from India as did six of seven purchasers when comparing domestic producers and subject imports from Russia.[135]

3. Substitutability and Other Conditions

We find that there is a moderate-to-high degree of substitutability between domestically produced granular PTFE resin and cumulated subject imports and that price is an important factor in purchasing decisions.

As discussed previously, U.S. producers and importers indicated that product from domestic and subject sources were generally interchangeable, with Russian product being

[130] CR/PR at II-7.

[131] CR/PR at II-7.

[132] As noted above, the Commission previously conducted antidumping and countervailing duty investigations concerning imports of PTFE products, including granular PTFE, from China and India pursuant to petitions filed in 2017. *See* CR/PR at I-5. The Commission ultimately made negative determinations of material injury and threat of material injury in the final phase of those investigations. *Polytetrafluoroethylene Resin from China and India,* Inv. Nos. 701-TA-588 and 731-TA-1392-1393 (Final), USITC Pub. 4801 (July 2018). Consequently, antidumping and countervailing duty orders were not imposed on imports of PTFE products from China and India.

[133] CR/PR at II-7.

[134] CR/PR at II-7.

[135] CR/PR at Table II-11.

somewhat less interchangeable than product from other sources.[136] Most responding purchasers reported that domestically produced and Indian granular PTFE resin were frequently or sometimes interchangeable (eight of 11) and that domestically produced and Russian product (five of nine) were always or frequently interchangeable.[137] Additionally, a plurality of responding purchasers indicated that domestic and Indian product were comparable on 13 of 16 factors and that domestic and Russian product were comparable on 8 of 16 factors.[138] Five purchasers also reported purchasing subject imports from India instead of the domestic like product and four purchased subject imports from Russia instead of the domestic like product since 2018.[139]

The record also indicates that issues such as customer requirements, quality, and availability of supply may moderate substitutability to some extent.[140] While the record indicates that product specifications are an important factor in purchasing decisions and purchasers may have optimized their equipment to work with a certain specification of granular PTFE resin, it also indicates that customers are able to adapt their production processes to different grades.[141] The record also indicates that there are specialized end uses where product quality is particularly important, such as semiconductors, but these specialized uses account for a relatively small part of the market.[142] Moreover, when comparing domestic granular PTFE resin with subject imports from both sources, at least half of responding purchasers reported

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[136] CR/PR at II-21 and Tables II-12 & II-13. Specifically, both integrated U.S. producers indicated that product from all sources were frequently interchangeable. CR/PR at II-21 and Table II-12. Additionally, a majority of importers (eight of 10) reported that domestic product and Indian product were frequently or sometimes interchangeable; and comparing domestic product to Russian product, a majority of importers (six of nine) reported such granular PTFE resin was frequently or sometimes interchangeable, while three reported they were never interchangeable, and a majority of purchasers (five of nine) reported that these products were always or frequently interchangeable. CR/PR at Tables II-13 and II-14.

[137] CR/PR at Table II-14.

[138] CR/PR at Table II-11.

[139] CR/PR at V-15. All of these purchasers reported that subject import prices were lower than the prices for the domestic like product.

[140] *See, e.g.,* CR/PR at II-12, II-17, II-23, and V-15.

[141] Purchasers have switched between products 1 and 2 and product 3 but must optimize their process for the particular product being used. *See* Hearing Tr. at 36-37 (Jacob). *See also* Domestic Producers' Posthearing Br., Answers to Commissioners' Questions at 17. The record indicates that there are varying costs involved in switching between product types or grades, ranging from low-cost and performed with relative ease to requiring major structural changes to an entire manufacturing facility at an estimated cost of $8-$10 million. *See* Hearing Tr. at 65-66 (Jacob), 160 (Arlati).

[142] Hearing Tr. at 87 (Rubin) ("…those applications represent a very small percentage of the overall market").

that the products were comparable with respect to factors pertaining to product quality and characteristics, including product quality meeting industry standards, product range, product specifications, and product consistency.[143] In addition, all granular PTFE resin from domestic and subject sources is produced or advertised as meeting ASTM standard D 4894, in addition to other industry standards, which detail several technical specifications for granular PTFE resin.[144]

Pricing data show substantial pricing observations between the domestic like product, subject imports from India, and subject imports from Russia. Indeed, *** percent of shipments of subject product from India and approximately *** percent of shipments of subject imports from Russia involved a quarterly price comparison with the domestic like product for pricing products 1 and 2.[145] While approximately *** of sales of Russian product met the definition of pricing product 3 for which there were no domestic observations, most of the specifications for pricing product 3 overlap with those of the other two products; product 3 primarily differs in having a particle size falling between that of pricing products 1 and 2.[146] As discussed above, the record indicates that there is some interchangeability between these products as purchasers can switch from pricing products 1 and 2 to product 3.[147]

The record further indicates that price is an important factor in purchasing decisions for granular PTFE resin. The most frequently cited top-three factors firms consider in their purchasing decisions were availability/supply (13 firms), quality (12 firms), and price/cost (11 firms).[148] Additionally, half of responding purchasers reported that they sometimes purchase the lowest-priced product and five of 16 reported they usually purchase the lowest-priced product.[149]

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[143] CR/PR at Table II-11.

[144] *See* CR/PR at I-20-21 and Table I-7. Specifications for granular PTFE resin include particle size, bulk density, water content, melting peak temperature, maximum thermal stability index, specific gravity, minimum tensile strength, and minimum percent elongation at break. *Id.* In addition, as noted above, U.S. producers Daikin, Chemours, and Indian producer GFL state they use the international ASTM standard D 4894. Russian producer Halopolymer lists a mix of standards, which are internal company standards, the Russian State Standard, DSC, and ASTM D 4894. *Id*.

[145] CR/PR at V-4 and *derived from* Tables V-3, V-4, and V-5.

[146] *See* CR/PR at V-4 and Table I-7 (overlap in ASTM classifications).

[147] The record indicates that purchasers have switched between products 1 and 2 and product 3 but must optimize their process for the particular product being used. *See* Hearing Tr. at 36-37 (Jacob). *See also* Domestic Producers' Posthearing Br., Answers to Commissioners' Questions at 17.

[148] CR/PR at II-13.

[149] CR/PR at II-14.

Granular PTFE resin production is capital-intensive with high fixed costs.[150] All PTFE resin production begins with production of TFE and related upstream inputs. Due to its unstable nature, TFE is generally not transported so the integrated domestic producers produce both TFE and downstream products, including granular PTFE resin, on the same premises.[151] The largest component of integrated U.S. producers' cost of goods sold ("COGS") is other factory costs, primarily fixed costs, which represented between *** percent of their total COGS during 2018 to 2020.[152] Raw material costs were the second-largest component of COGS for the integrated producers, ranging from *** percent (2019) to *** percent (interim 2021) of total COGS.[153]

Granular PTFE resin is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments were from inventories, with lead times averaging *** days, and importers reported that *** percent of their commercial shipments were from inventories, with lead times averaging *** days.[154] Integrated U.S. producers maintained a level of inventories during the POI, which, as a ratio to their production, increased from *** percent in 2018 to *** percent in 2019 before decreasing to *** percent in 2020; it was *** percent in interim 2020 and *** percent in interim 2021.[155] Integrated U.S. producers reported that their sales were close to *** among long-term, annual, and short term, contracts. U.S. importers reported that *** their sales were short-term contracts, *** percent were annual contracts, and the remainder spot sales.[156]

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[150] Hearing Tr at 28-29 (Segars), 42-43 (Pratt); CR/PR at VI-15.

[151] CR/PR at I-15 and n.62, VI-12 n.19.

[152] CR/PR at VI-15. On a per unit basis, other factory costs for integrated U.S. producers increased from $*** per pound in 2018 to $*** per pound in 2019 before decreasing to $*** per pound in 2020; they were $*** per pound in interim 2020 and $*** per pound in interim 2021.

For U.S. compounders, raw material costs were the largest component of COGS, with a share of total COGS ranging from *** percent in 2018 to *** percent in 2020. CR/PR at Table VI-3. In 2020, granular PTFE resin accounted for the majority of their raw material costs. CR/PR at VI-13-14.

[153] CR/PR at VI-11-13, Table VI-1. The primary raw materials for granular PTFE resin production include fluorspar, hydrofluoric acid, sulfuric acid, and chloroform. *Id.* On a per unit basis, raw material costs for integrated U.S. producers, which include a fixed overhead component related to the production of TFE and related upstream inputs, increased from $*** per pound in 2018 to $*** per pound in 2019 before decreasing to $*** per pound in 2020; they were $*** per pound in interim 2020 and $*** per pound in interim 2021. CR/PR at Table VI-1.

[154] CR/PR at II-15. Chemours reported average lead times from inventory of *** days, and Daikin reported average lead times of *** days. U.S. producers' questionnaire responses at IV-8.

[155] CR/PR at Table III-13. Domestic compounders' end-of-period inventories as a ratio to their U.S. production increased from *** percent in 2018 to *** percent in 2020; the ratio was *** percent in interim 2020 and *** percent in interim 2021. CR/PR at Table III-14.

[156] CR/PR at V-2 and Table V-2.

As noted earlier, granular PTFE resin from India and China was subject in 2018 to prior antidumping and countervailing duty investigations on PTFE resin, a product that included granular PTFE resin.[157] Granular PTFE resin from China is currently subject to an additional 25 percent *ad valorem* duty under section 301 of the Trade Act of 1974 ("section 301 tariffs"). Section 301 duties on such merchandise became effective August 23, 2018.[158]

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[159]

The volume of cumulated subject imports fluctuated but decreased overall by 12.8 percent from 2018 to 2020.[160] It declined from 8.3 million pounds in 2018 to 7.17 million pounds in 2019, and then increased to 7.25 million pounds in 2020; the volume was lower in

[157] Following preliminary affirmative determinations by Commerce and the Commission, PTFE resin from India became subject to provisional measures effective March 8, 2018, and PTFE resin from China became subject to provisional measures effective May 7, 2018. *Polytetrafluoroethylene Resin From India: Preliminary Affirmative Countervailing Duty Determination*, 83 Fed. Reg. 9842 (Mar. 8, 2018); *Polytetrafluoroethylene Resin From the People's Republic of China: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*, 83 Fed. Reg. 20039 (May 7, 2018). The Commission subsequently made final negative determinations in its investigations in July and November of 2018. *Polytetrafluoroethylene Resin From India,* 83 Fed. Reg 32150 (July 11, 2018); *Polytetrafluoroethylene (PTFE) Resin From China and India; Determination*, 83 Fed. Reg. 62603 (Dec. 4, 2018).

[158] CR/PR at I-11 and n.33; Respondents' Prehearing Br. at 3-4.

[159] 19 U.S.C. § 1677(7)(C)(i).

[160] Apparent U.S. consumption declined to a greater degree – by *** percent – than did subject imports over the full years of the POI. CR/PR at Table C-2.

interim 2021 (*** pounds) than in interim 2020 (4.4 million pounds).[161] [162]

Subject imports' share of apparent U.S. consumption, by quantity, increased by *** percentage points from 2018 to 2020, increasing from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; their share was lower in interim 2021, at *** percent than in interim 2020, at *** percent.[163] The ratio of subject imports to production by U.S. integrated producers increased by *** percentage points from 2018 to 2020. The ratio increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; and was lower in interim 2021, at *** percent than in interim 2020, at *** percent.[164]

Based on the foregoing, we find that the volume of subject imports is significant in absolute terms and relative to production and consumption in the United States, and that the increase in volume relative to production and consumption is also significant.

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[161] CR/PR at Table IV-2. By value, cumulated subject import volume declined from $36.7 million in 2018 to $30.1 million in 2019 and $22.2 million in 2020; it was $13.3 million in interim 2020 and $*** million in interim 2021. *Id.*

U.S. importers' shipments of cumulated subject imports increased by 6.0 percent from 2018 to 2019, from 6.8 million pounds to 7.2 million pounds, and then decreased by 9.3 percent to 6.6 million pounds in 2020; they were *** percent lower in interim 2021 (*** pounds) than in interim 2020 (3.89 million pounds). CR/PR at Table C-2.

[162] The petitions in these investigations were filed in January 2021. Domestic Producers contend that the filing of the petitions created uncertainty in the market which constrained subject import volumes in interim 2021, leading to the domestic industry regaining market share from subject imports. Domestic Producers' Prehearing Br. at 24-25; *see also* ***'s U.S. importer questionnaire response at III-18 (***). We recognize that the volume of cumulated subject imports was *** percent lower in interim 2021 than in interim 2020, and note that shipments of cumulated subject imports were *** percent lower in interim 2021 than in interim 2020 as apparent U.S. consumption was *** percent higher. CR/PR at Tables IV-2, C-2. Consequently, cumulated subject imports' share of the U.S. market was *** percentage points lower in interim 2021 than in interim 2020. We determine that the filing of the petitions had a moderating effect on cumulated subject import volumes which resulted in subject imports' lower U.S. market share in interim 2021 compared to interim 2020.

[163] CR/PR at Table C-2. By value, the market share of cumulated subject import shipments increased by *** percent from 2018 to 2020, increasing from *** percent in 2018 to *** percent in 2019 before decreasing to *** percent in 2020; it was lower in interim 2021, at *** percent than in interim 2020, at *** percent. *Id.*

[164] CR/PR at Table IV-2. Combining the production of compounders and integrated producers, the ratio of subject imports to U.S. production increased from *** percent in 2018 to *** percent in 2020; it was lower in interim 2021 (*** percent) than in interim 2020 (*** percent). *Derived from* CR/PR at Tables IV-2 and C-2.

As previously discussed, because compounders sourced PTFE as a raw material input from subject, nonsubject, and domestic sources for their production of compounded granular PTFE resin, there is some degree of double counting in combining the production of U.S. compounders and integrated producers. Consequently, the above figures are likely understated.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the subject imports, the Commission shall consider whether

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[165]

As previous discussed in Section V.B.3, we find that the domestic like product and cumulated subject imports have a moderate-to-high degree of substitutability, and that price is an important factor in purchasing decisions for granular PTFE resin.

The Commission collected quarterly price data on three granular PTFE resin products.[166] Both integrated U.S. producers and three importers provided useable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters. Pricing data reported by these firms accounted for approximately *** percent of integrated U.S. producers' U.S. shipments and 100 percent of U.S. shipments of subject imports from India and Russia in 2020.[167]

The pricing data show universal underselling. Subject imports were priced below domestically produced product in all 56 available quarterly comparisons from the first quarter of 2018 through the second quarter of 2021, at margins ranging from *** percent to *** percent and an average underselling margin of 42.2 percent.[168] The quantity of subject imports that undersold the domestic like product during the POI was *** pounds.[169] The pricing data also show that as subject imports universally undersold the domestic like product, the domestic

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[165] 19 U.S.C. § 1677(7)(C)(ii).

[166] CR/PR at V-4. The price products were:

Product 1.-- Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Product 2.-- Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

Product 3.-- Granular PTFE resin, molding grade, bulk density 450-600g/L, 110-250um average particle size, not modified, not filled, in packages of 25kg or greater. *Id.*

[167] CR/PR at V-4. No U.S. producers or importers of Indian product provided pricing data for product 3. *Id.*

[168] CR/PR at Table V-9.

[169] CR/PR at Table V-9.

producers' sales quantity of product 1 decreased while subject import sales of product 1 increased. Product 1 comprised the majority of domestic producers' U.S. shipments and *** percent of U.S. importers' U.S. shipments of subject imports.[170]

Additional record evidence regarding lost sales and revenue corroborate that subject imports were sold at lower prices than the domestic like product during the POI. All six purchasers that reported purchasing subject imports instead of the domestic like product since 2018 indicated that subject imports were lower priced than the domestic like product, and one reported that price was a primary reason that it chose to purchase *** pounds of subject imports rather than the domestic product.[171] The data show that subject imports' share of purchasers' reported purchases increased by *** percentage points from 2018 to 2020 while domestic producers' share declined by *** percentage points.[172] Moreover, Chemours and Daikin provided documentation, consisting of ***.[173]

Given the substitutability of granular PTFE resin, the importance of price in purchasing decisions, and the pricing and lost sales data, as well as other record information showing that cumulated subject imports were lower priced than domestic product, we find that there has been significant price underselling of the domestic like product by subject imports. These lower-priced subject imports captured sales from the domestic industry and gained market share at the direct expense of the domestic industry. Cumulated subject imports gained *** percentage points of market share from 2018 to 2020 and the domestic industry lost *** percentage points of market share during that time.[174]We have also considered price trends during the POI. The domestic industry's price trends were mixed, with the price of product 1 increasing and the price of product 2 declining overall; domestic producers' did not report sales of product 3.[175] Domestic producers' prices for product 1 generally increased from the first

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[170] CR/PR at Table V-3 and Fig. V-1. Domestic producers' total shipments of product 1 during the POI were *** pounds, compared with *** pounds for product 2 and none for product 3. *Id.* at Table V-6. Moreover, product 1 accounted for *** of U.S. importers' U.S. shipments of cumulated subject imports. Calculated from CR/PR at Table V-6.

[171] CR/PR at Table V-11 and V-12. Four of the six purchasers indicated that availability of supply was a factor in their decision to purchase subject imports rather than domestic product. *Id.* at Table V-11.

[172] CR/PR at Table V-10.

[173] *See* Domestic Producers' Posthearing Br. at Exhs. 1 and 7.

[174] CR/PR at C-2.

We address below in Section V.E Respondents' argument that the absence of domestic sales of product 3 supports their contention that subject imports did not take sales from domestic producers.

[175] Although *** provided data for product 3, these data were the ***. CR/PR at V-4 n.5. These data were not included in product 3 in order to avoid double counting. *Id.*

quarter of 2018 to the second quarter of 2019, decreased through the first quarter of 2021, and then increased in the second quarter of 2021, for an overall increase from $*** per pound in the first quarter of 2018 to $*** per pound in the second quarter of 2021.[176] As noted above, product 1 accounted for the majority of domestic producers' U.S. shipments. Domestic prices for product 2 also fluctuated but decreased overall from $*** per pound in the first quarter of 2018 to $*** per pound in the second quarter of 2021.[177] Subject import prices for all three pricing products generally increased during 2018 and then decreased from 2019 through 2020; subject import prices for products 1 and 3 began to increase in the fourth quarter of 2020 through the second quarter of 2021 and prices for product 2 began to increase in the second quarter of 2021.[178]

Based on the foregoing, we cannot conclude that subject imports depressed domestic prices to a significant degree.

We have also considered whether subject imports prevented price increases which would otherwise have occurred to a significant degree.[179] The integrated U.S. producers' COGS to net sales ratio increased from *** percent in 2018 to *** percent in 2019 before decreasing to *** percent in 2020, for an overall increase of *** percentage points; it was higher at ***

[176] *See* CR/PR at Table V-3.

[177] *See* CR/PR at Tables V-4 and V-6.

[178] CR/PR at Tables V-3, V-4, and V-5.

[179] Chemours and Daikin reported that they had to reduce prices or roll back price increases due to competition with subject imports. One of 18 purchasers reported that U.S. producers had reduced prices due to lower-priced imports, although eight of 18 purchasers did not report any such price reductions. *Id.* at V-15.

percent in interim 2021, than in interim 2020, at *** percent.[180] As discussed previously, granular PTFE resin production is capital-intensive with high fixed costs. As the domestic industry's production and sales volume declined, its per unit COGS increased as there were fewer sales over which to spread these costs.[181] This increase in per unit COGS was led by an increase in per unit other factory costs, which increased by $*** per pound (*** percent) from 2018 to 2020, and was followed by per unit raw materials costs which increased by $*** per pound (*** percent), while its total net sales average unit value ("AUV") increased to a lesser degree, by only $*** per pound (*** percent).[182] Thus, from 2018 to 2020, as apparent U.S. consumption declined by *** percent by quantity and the domestic industry lost ***

[180] CR/PR at Tables VI-1 and C-2. In evaluating the effects of subject import competition, we find it appropriate here to focus primarily on the integrated producers given that subject imports are concentrated in uncompounded product. As a whole, the industry's COGS to net sales ratio increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020, an overall increase of *** percentage points; it was higher in interim 2021, at *** percent than in interim 2021, at *** percent. *Id.* at Tables F-1 and C-2.

As noted above, the integrated U.S. producers' COGS-to-net-sales ratio was higher in interim 2021 than in interim 2020. Both integrated producers state that despite the petitions' moderating effect on subject import volumes, they either did not raise prices or receive significant new sales volumes until after the interim 2021 period. Hearing. Tr. at 22 (Rubin) ("{T}he filing of these cases in January 2021 had a beneficial impact on Daikin's operations. Customers and sales volume that we have lost {to} subject import in prior years began to return to Daikin. In addition, effective July 1, 2021, Daikin increased prices of granular PTFE by up to 20 percent.") and 98 (Pratt) ("{F}rom Chemours' perspective, we did receive interest after this case was filed early in 2021. However, what we felt was that a lot of our negotiations and contracts are completed at the end of a calendar year, in 2020, and so there wasn't as much interest as in the past because many of the customers had already secured a supply and much lower price for most of 2021. But we still are seeing now the ability to raise prices in this market."). We note that subject imports continued to undersell the domestic like product in interim 2021 by margins ranging from *** to *** and continued to hold a large share of the U.S. market as shipments of subject imports were only *** percent lower in interim 2021 than in interim 2020. CR/PR at Tables V-3 and V-4, C-2.

[181] From 2018 to 2020, integrated domestic producers' net sales decreased by quantity by *** percent and by value by *** percent. CR/PR at Table C-2. Over the same period, the value of total COGS decreased by less, *** percent, as other factory costs decreased by *** percent, raw material costs decreased by *** percent, and direct labor costs decreased by *** percent. CR/PR at Table VI-1.

[182] CR/PR at Table VI-2. It is not clear that domestic producers could have reasonably expected to pass along fully that portion of the unit cost increase attributable to raw material cost increases. Raw material costs of integrated U.S. producers reflect both the variable costs associated with upstream inputs, as well as overhead costs associated with conversion into intermediate inputs. CR/PR at VI-13. There is some indication that the relevant underlying variable costs, which include raw chemicals such as *** did not increase as much as reported overall raw material costs. *See Id.* Specifically, Daikin stated ***. *Id*. Daikin also reported that *** CR/PR at VI-13 n.26. *** reported that chloroform prices fluctuated for much of 2018 to 2020 and have increased due to shortages in 2021. CR/PR at V-1. In 2019, Chemours ***. CR/PR at VI-13 n.25.

percentage points of market share to subject imports, the domestic industry was not able to raise prices to cover its increasing per unit costs and it therefore faced a cost-price squeeze which, as described below in Section V.E (Impact), adversely affected the domestic industry's profitability, and contributed to material injury.[183] However, given the share of fixed costs comprising the domestic industry's increase in per unit COGS, and the lack of evidence that domestic producers could have reasonably expected to pass along those increased fixed costs in the absence of subject imports, we cannot conclude that cumulated subject imports prevented price increases which otherwise would have occurred to a significant degree.

In sum, we find that the significant underselling by cumulated subject imports allowed subject imports to gain sales and market share from the domestic industry. We therefore find that cumulated subject imports had significant price effects.

E. Impact of the Subject Imports[184]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on

[183] CR/PR at Table C-2. Although apparent U.S. consumption declined over the full years of the POI, there is a limited range of substitute products and it is unclear the extent to which changes in demand relative to subject import pricing may have affected the ability of domestic producers to raise prices of granular PTFE resin. *See, e.g.*, Domestic Producers' Posthearing Br. at Answers to Commission Questions, pp. 45-46; Hearing Tr. at 197 (Arlati) ("I've never, in my experience, I haven't seen the demand affecting the price . . . . The price, you pay the price for what it is. So, our demand, our customers' demand cannot affect that").

[184] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less value concerning imports of granular PTFE resin from India, Commerce found a dumping margin of 13.09 percent. *Granular Polytetrafluoroethylene Resin From India: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 87 Fed. Reg. 3772 (Jan. 25, 2022). In its final determination of sales at less than fair value concerning imports of granular PTFE resin from Russia, Commerce found a dumping margin of 17.99 percent. *Granular Polytetrafluoroethylene Resin From the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value*, 87 Fed. Reg. 3774 (Jan. 25, 2022). We take into account in our analysis the fact that Commerce has made final findings that all subject producers in India and Russia are selling subject imports in the United States at less than fair value. Further, our analysis of the significant underselling of subject imports and their large underselling margins, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

the state of the industry."[185] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[186]

By nearly every measure, the domestic industry' performance deteriorated from 2018 to 2020. As cumulated subject imports captured market share from the domestic industry, the domestic industry's output indicators – including production, U.S. shipments and the capacity utilization rate – fell by substantially more than the decline in apparent U.S. consumption, and the industry's financial condition deteriorated as domestic producers incurred reduced sales and revenues and increasing per-unit costs.

The domestic industry's production,[187] capacity utilization,[188] and U.S. shipments[189] all declined from 2018 to 2020, while production capacity increased overall; the industry's output

[185] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[186] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[187] Integrated U.S. producers' production decreased by *** percent from 2018 to 2020, decreasing from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; it was higher in interim 2021 (*** pounds) than in interim 2020 (*** pounds). CR/PR at Tables C-2 and III-6.

Compounders' production decreased from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; it was higher in interim 2021 (*** pounds) than in interim 2020 (*** pounds). *Id.* at Table C-2.

[188] Integrated U.S. producers' capacity utilization decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). CR/PR at Tables III-6 and C-2.

Compounders' capacity utilization rate decreased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). *Id.* at Table C-2.

[189] The domestic industry's U.S. shipments decreased by *** percent from 2018 to 2020, decreasing from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; they were *** percent higher in interim 2021 (*** pounds) than in interim 2020 (*** pounds). CR/PR at Table C-2. By value, the domestic industry's U.S. shipments decreased by *** percent from 2018 to 2020, decreasing from $*** in 2018 to $*** in 2019 and $*** in 2020; they were *** percent higher in interim 2021 ($***) than in interim 2020 ($***). *Id.* at Table C-2 *and see* Table C-2 note.

indicators were generally improved in interim 2021 compared with interim 2020.[190] The domestic industry's market share decreased by *** percentage points from 2018 to 2020, declining from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent).[191] Integrated U.S. producers' end-of-period inventories declined over the POI.[192]

The domestic industry's employment indicia followed similar trends, declining from 2018 to 2020 and experiencing improvement in interim 2021 compared to interim 2020. The industry's number of PRWs,[193] total hours worked,[194] wages paid,[195] and productivity,[196] all declined from 2018 to 2020. The industry's unit labor costs increased overall from 2018 to

[190] Integrated U.S. producers' production capacity increased by *** percent from 2018 to 2019, from *** pounds to *** pounds, and then decreased by *** percent to *** pounds in 2020 for an overall increase of *** percent; it was unchanged between interim periods at *** pounds. CR/PR at Tables C-2 and III-6.

Compounders' capacity was constant throughout the POI at *** pounds in the full-year periods and *** pounds in the interim periods. *Id.* at Table C-2.

[191] CR/PR at Table C-2. By value, the domestic industry's market share decreased overall by *** percentage points from 2018 to 2020, first decreasing from *** percent in 2018 to *** percent in 2018 before increasing to *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). *Id.*

[192] Integrated U.S. producers' end-of-period inventories decreased by *** percent from 2018 to 2020, from *** pounds in 2018 to *** pounds in 2019 and *** pounds in 2020; they were lower in interim 2021 (*** pounds) than in interim 2020 (*** pounds). CR/PR at Table C-2.

Compounders' end-of-period inventories increased overall from 2018 to 2020, first increasing from *** pounds in 2018 to *** pounds in 2019 and then decreasing to *** pounds in 2020; they were lower in interim 2021 (*** pounds) than in interim 2020 (*** pounds). *Id*.

[193] The industry's PRWs decreased from *** in 2018 to *** in 2019 and *** in 2020; they were higher in interim 2021 (***) than in interim 2020 (***). CR/PR at Table C-2.

[194] Total hours worked (per 1,000 hours) decreased from *** in 2018 to *** in 2019 and *** in 2020; they were higher in interim 2021 (***) than in (***) in interim 2020. CR/PR at Table C-2.

[195] Wages paid decreased from $*** in 2018 to $*** in 2019 and $*** in 2020; they were higher in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table C-2.

[196] Productivity for integrated U.S. producers decreased from *** pounds per hour in 2018 to *** pounds per hour in 2019 and then increased to *** pounds per hour in 2020, for an overall decrease of *** percent; productivity was higher in interim 2021 (*** pounds per hour) than in interim 2020 (*** pounds per hour). CR/PR at Tables C-2 and III-24.

Compounders' productivity decreased by *** percent from 2018 to 2020, decreasing from *** pounds per hour in 2018 to *** pounds per hour in 2019 and *** pounds per hour in 2020; it was higher in interim 2021 (*** pounds per hour) than in interim 2020 (*** pounds per hour). CR/PR at Tables C-2 and III-25.

2020 and were lower in interim 2021 than interim 2020.[197]

The domestic industry's financial indicia generally deteriorated from 2018 to 2020 and were somewhat improved in interim 2021 compared to interim 2020, although the integrated U.S producers did not report improving results. The domestic industry's net sales and unit net sales values,[198] gross profits,[199] operating income,[200] and net income,[201] all declined overall from 2018 to 2020, and although the industry's operating losses and net losses declined somewhat from 2019 to 2020, the industry's margins were worse in 2020 than in 2019. Operating income as a ratio to net sales declined from *** percent in 2018, to *** percent in 2019, and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent).[202] The industry's COGS to net sales ratio increased from 2018 to 2020 as net sales decreased by more than total COGS.[203] The industry's total net assets decreased from $*** in 2018 to $*** in 2019 and $*** in 2020.[204] Capital expenditures and research and

[197] Integrated U.S. producers' unit labor costs increased from $*** per pound in 2018 to $*** per pound in 2019 and then decreased to $*** per pound in 2020, an overall increase of *** percent; they were lower in interim 2021 ($*** per pound) than in interim 2020 ($*** per pound). CR/PR at Tables C-2 and III-24.

CR/PR at Tables C-2 and III-24. Compounders' unit labor costs increased by *** percent from 2018 to 2020, increasing from $*** per pound in 2018 to $*** per pound in 2019 and $*** per pound in 2020; they were lower in interim 2021 ($*** per pound) than in interim 2020 ($***). *Id.* at Tables C-2 and III-25.

[198] The domestic industry's net sales by value decreased from $*** in 2018 to $*** in 2019 and $*** in 2020; they were higher in interim 2021 ($***) than in interim 2020 ($***). Unit net sales values were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-2.

[199] Gross profits decreased from $*** in 2018 to $*** in 2019 and $*** in 2020; they were higher in interim 2021 ($***) than in interim 2020 ($***). CR/PR at Table C-2.

[200] Operating income was $*** in 2018, *** in 2019, and *** in 2020; it was *** in interim 2020 and *** in interim 2021. CR/PR at Table C-2.

[201] Net income was $*** in 2018, *** in 2019, and *** in 2020; it was *** in interim 2020 and *** in interim 2021. CR/PR at Table C-2.

[202] CR/PR at Table C-2. Net income as a ratio to net sales declined from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). *Id.*

[203] The COGS to net sales ratio increased from *** percent in 2018 to *** percent in 2019 and *** percent in 2020; it was higher in interim 2021 (*** percent) than in interim 2020 (*** percent). Total COGS were $*** in 2018, $*** in 2019, and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-2.

[204] CR/PR at Table C-2.

development ("R&D") expenses generally declined during the POI.[205]

Thus, the record shows that from 2018 to 2020, during a period of declining demand, significant volumes of cumulated subject imports entered the United States, increasing significantly relative to U.S. consumption and production, and universally undersold the domestic like product, gaining *** percentage points of market share primarily at the expense of the domestic industry. As a result, the domestic industry's output and revenues were lower than they otherwise would have been, and the lower output led to increasing per unit costs and resulted in a cost-price squeeze for the domestic producers. The domestic industry's production, U.S. shipments, and financial performance declined from 2018 to 2020, with the domestic industry sustaining operating and net losses beginning in 2019. In interim 2021, as subject import market share declined somewhat after the filing of the petitions and apparent U.S. consumption increased, the domestic industry increased its output, resulting in some improvement for the domestic industry as its market share also increased. The industry, however, remained unprofitable as subject imports remained at elevated levels compared to the beginning of the POI and continued to undersell the domestic like product. Based on the foregoing, we find that subject imports had a significant impact.

We have considered Respondents' arguments that declines in the domestic industry's performance were not caused by subject imports but by other factors.[206] First, Respondents argue that subject imports did not take sales that otherwise would have been served by the domestic industry, contending that subject imports only replaced nonsubject imports,

[205] Capital expenditures decreased from $*** in 2018 to $*** in 2019 before increasing to *** in 2020; they were $*** in interim 2020 and $*** in interim 2021. R&D expenditures decreased from $*** in 2018 to $*** in 2019 and $*** in 2020; they were $*** in interim 2020 and $*** in interim 2021. CR/PR at Table C-2.

[206] Respondents argue that the Commission's negative determinations in *PTFE Resin from China and India, Inv. Nos. 701-TA-588 and 731-TA-1392-1393* (Final), USITC Pub. 4801 (July 2018) support a negative finding in the present investigations. Respondents' Posthearing Br. at 2-9. We disagree. The principle is well established that each Commission investigation is sui generis. *See Nucor Corp.,* 414 F.3d at 1340*; Cleo Inc. v. United States*, 501 F.3d 1291 (Fed. Cir. 2007); *Hitachi Metals, Ltd,* 949 F.3d at 718. Fundamentally, these investigations concern, among other differences, different products, different markets, different industries, different periods, different market share trends, and different subject countries.

principally from China, as they receded from the U.S. market.[207] This argument, however, is belied by the data. As noted, the majority of subject imports' gain in market share was at the direct expense of the domestic industry. While nonsubject imports lost *** percentage points of U.S. market share between 2018 and 2020, subject imports gained *** percentage points over the same period and the domestic industry lost *** percentage points. Moreover, from 2018 to 2019, when Respondents claim that subject imports were filling a gap left by nonsubject imports from China, nonsubject imports lost only *** percentage points while subject imports gained *** percentage points and the domestic industry lost *** percentage points.[208]

Respondents also argue that the domestic industry does not make the full range of granular PTFE resin grades and products required by U.S. purchasers, focusing on the price comparisons for pricing product 3, and thus any competition with subject imports is attenuated because subject imports supply different market segments.[209] The record indicates, however, that there is direct competition between subject imports and the domestic like product which enabled subject imports to take market share at the direct expense of the domestic industry. As discussed previously, the record shows that there is a moderate-to-high degree of substitutability between subject imports and the domestic like product, as demonstrated, in particular, by purchaser's questionnaire responses concerning the interchangeability of granular PTFE from different sources.[210] Moreover, granular PTFE resin is generally produced to or advertised as meeting ASTM standard D 4894, as well as other industry standards, all of which provide several technical specifications for granular PTFE resin. The domestic like

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[207] *See* Respondents' Posthearing Br. at 3-6; Respondents' Final Comments at 6. More specifically, Respondents argue that as nonsubject imports from China, which they contend are characteristically similar to subject product, receded from the U.S. market in 2017 and 2018 due to prior AD/CVD investigations and Section 301 tariffs, previous customers of Chinese product shifted their purchases to product from India and Russia. *Id.*

To the extent that Respondents' argument specifically contends that Chinese product was replaced by Russian product, we note that Respondents supplied data from *** indicating that its purchases of ***. *See* Respondents' Posthearing Br. at Exh. 1, p. 5.

[208] CR/PR at Table C-2.

[209] Respondent's Prehearing Br. at 33-38; Respondents' Posthearing Br. at 12-13.

[210] Purchasers generally reported interchangeability between subject imports from Russia and the domestic product and subject imports from India, notwithstanding that subject imports from Russia are mostly product 3, while the domestic product and subject imports from India both consist entirely of granular PTFE resin meeting pricing products 1 and 2. CR/PR at Table II-14. Purchasers did not perceive there to be limited interchangeability between granular PTFE resin from different sources despite Respondents' claim that differences in the mix of pricing products from different sources reflected different uses for pricing product 3.

product and subject imports overlap in many of these technical specifications, including the specifications for pricing product 3.[211]

In addition, there is limited probative evidence in the record to suggest that subject imports serve different market segments than the domestic like product. When asked to provide evidence of the specific end uses which require subject product (including product 3) to the exclusion of domestic product, Respondents were generally unable to support their claim. Rather than providing examples of specific customers or end uses, they generally addressed the issue in terms of the product characteristics requested by their customers, stating, for instance, that it is "difficult for granular PTFE resin producers and importers to have a holistic view of what…{their} customers' customers are producing," and that they are not "experts in gaskets, seals, or the many other uses further downstream." They state that their customers have specific demands for specific PTFE grades and that most of them are producing "PTFE sheet, film, billets, shapes, and compounds."[212] However, these are the same general granular PTFE

[211] *See* CR/PR at I-20-21, Table I-7; Domestic Producers' Posthearing Br. at 14 (illustrating that product 3 overlaps with products 1 and 2 in bulk density, specific gravity, tensile strength, elongation, and shrinkage, differing only in that its particle size range falls between that of products 1 and 2).

Respondents contend that imports of product 3 accounted for the vast majority of the increase in subject import market share from 2018-2020, filling a demand that domestic producers could not meet, and that any market share shift attributable to subject imports other than product 3 (*i.e.,* an estimated *** percent of apparent U.S. consumption from 2018-2020) was immaterial. *See* Respondents' Prehearing Br. at 37-38; Domestic Producers' Final Comments at 7. While we do not find that the record supports Respondents' underlying contention that product 3 serves a unique portion of the market that does not compete against domestic production, we note that Respondents' own analysis of the data shows that subject imports still gained significant market share at the domestic industry's expense with respect to imports of granular PTFE resin other than product 3.

[212] *See, e.g.,* Respondents' Posthearing Br. at 12-13 and Exh. 1, pp. 1-2 & 25-26 and Respondents' Prehearing Br. at 21-22, 27.

In testimony, GFL's industry witness cited OEM markets, automotive, electronics, and semiconductors, as select domestic industry market segments that it does not serve, stating that those sectors require higher specs, longer contracts, and longer qualification times. Hearing Tr. at 257 (Bhatnagar). However, as discussed previously, these specialized uses represent a relatively small part of the overall market. Respondents likewise did not support their contention that the portion of the market allegedly served by subject imports was growing while that portion served by the domestic producers was contracting. *See* Respondents' Final Comments at 5; Respondents' Posthearing Br. at 9.

resin products serviced by domestic producers.[213] [214] Indeed, the record demonstrates sales of the domestic product and subject imports to many of the same customers.[215]

Respondents also contend that a lack of correlation between market share trends and the domestic industry's financial performance demonstrates that injury cannot be attributed to subject imports.[216] Here, Respondents contend that we should focus our analysis on the data of the integrated U.S. producers because it is difficult to disentangle the effects of subject imports on the performance of the compounders.[217] As an initial matter, there is no requirement that an industry's financial performance strictly track its market share trends in order to find that subject imports materially injured the domestic industry. As explained above, subject imports pervasively undersold the domestic like product, taking sales and market share from domestic producers and causing their output and revenues to be lower than they otherwise would have been, which in turn led to lower profitability for the industry. Moreover, trends for the integrated U.S. producers and the domestic industry as a whole indicate there is

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[213] *See, e.g.,* Respondents' Prehearing Br. at Exhs. 1-4 (product specification sheets which include advertised applications for the granular PTFE resin of Daikin, Chemours, GFL, and HaloPolymer, where Daikin's product is indicated for use in "general industrial" and "medium billet compression molding" and Chemours' product is indicated for use in "skived films and sheets, gaskets, packings, mechanical seals, and similar products" among a range other uses). We also note that Industrial Plastics, one of the largest purchasers, contacted *** about securing domestic product in ***, after the filing of the petitions. Hearing Tr. at 212 (Arlati); Domestic Producers' Posthearing Br. at Attach. B(1).

[214] Respondents also argue that adverse price effects cannot be attributed to subject imports because of market segmentation which is demonstrated by their analysis showing that subject import prices were negatively correlated with domestic industry prices. Respondents' Prehearing Br. at 44-51. We observe that the pricing data show substantial overlap between the domestic like product and subject imports of pricing products 1 and 2. We do not find that the price trends are so different as to suggest a lack of competition. For product 1, both domestic and subject import prices initially increased, then declined, and then increased in interim 2021. For product 2, both domestic and subject import prices fluctuated within a couple of dollars per pound (approximately $***-$*** per pound for the domestic like product and $***-$*** per pound for subject imports). CR/PR at Tables V-3 and V-4. Moreover, prices for Russian imports of product 3 followed similar trends as subject import prices for products 1 and 2, supporting the overlap in physical characteristics between products 3 other forms of granular PTFE, previously discussed. CR/PR at Tables V-3, V-4, and V-5.

[215] CR/PR at Table V-10; Petitioners' Posthearing Brief, Answers to Questions at 1-2.

[216] Respondents' Prehearing Br. at 56. Relatedly, Respondents contend that improvement in the domestic industry's volume indicators in interim 2021 are attributable to recovery in demand in the market segments where integrated producers are focused. Respondents' Posthearing Br. at Exh.1, pp. 45-46. However, as previously discussed, there is limited evidence in the record to suggest that subject imports serve different market segments than the domestic like product, and the record indicates there is direct competition between subject imports and the domestic like product as well as sales to the same customers.

[217] Respondents' Prehearing Br. at 53 n. 178.

a correlation between domestic industry financial performance and subject imports. Specifically, between 2018 and 2020, the domestic industry's financial performance declined, including declines in the industry's ratios of gross profits, operating income, and net income to net sales, as subject imports gained market share.[218] After the petitions were filed in January 2021, the domestic industry gained market share from subject imports and increased its production, shipments, and employment.[219] Some of the domestic industry's financial indicia also improved in interim 2021 compared to interim 2020.[220] To the extent that the integrated U.S. producers' profitability was lower in interim 2021 than in interim 2020, integrated U.S. producers experienced the adverse effects of subject imports more acutely than compounders because they competed directly with the vast majority of subject imports. Consequently, when subject import shipments declined modestly in interim 2021 compared to interim 2020, but nevertheless remained at elevated levels in the U.S. market and continued to undersell the domestic like product in every comparison and by large margins, the integrated U.S. producers' profitability was lower in interim 2021 despite achieving greater production and shipments.

Lastly, Respondents argue that various supply disruptions affected Chemours's and Daikin's ability to supply the U.S. market throughout the POI, which led to purchaser concerns about the availability of domestic supply.[221] Chemours and Daikin, however, contend that they did not experience significant supply constraints and that they were always able to supply customers.[222] We find that the record does not indicate that any supply constraints experienced by domestic producers were so significant as to explain the shifts in market share from the domestic industry to subject imports during the POI. Domestic producers increased their capacity and had substantial and increasing excess capacity throughout the POI from which they could have supplied additional volumes of granular PTFE resin to the U.S. market.[223] They also maintained substantial inventory levels from which to supply customers throughout the POI.[224] Indeed, apparent U.S. consumption declined during the full years of the POI, which naturally led to an increase in the domestic industry's available capacity and undermines the contention that there were significant domestic supply constraints, particularly given that the

[218] CR/PR at Tables VI-1 and G-1.

[219] CR/PR at Table C-2.

[220] CR/PR at Table G-1 (showing improvements in operating losses and net losses).

[221] *See* Respondent's Prehearing Br. at 22-25. *See also* Respondents' Posthearing Br. at Exh. 1, pp. 35-40.

[222] Domestic Producers' Posthearing Br. at 5-8; Domestic Producers' Final Comments at 7.

[223] The record indicates that *** Daikin had to idle capacity in 2019 due to low demand. Hearing Tr. at 22, 127 (Rubin); CR/PR at III-8 n.12.

[224] CR/PR at Table C-2. ***. However, ***. ***. ***. CR/PR at II-7.

integrated producers' production capacity increased between 2018 and 2020.[225] Accordingly, we find that the domestic industry's supply issues during the POI do not adequately explain subject imports' *** percentage point gain in market share at the expense of the domestic industry from 2018 to 2020.

We also have considered whether there are other factors that may have had an impact on the domestic industry to ensure that we are not attributing injury from such other factors to subject imports. As described above, nonsubject imports were present in the market throughout the POI. However, their volumes and market share were substantially less than those of the subject imports over most of the POI. Further, the volume and market share of nonsubject imports declined from 2018 to 2020, and were lower in interim 2021 than in interim 2020.[226] We therefore find that nonsubject imports do not explain the domestic industry's declines in performance during the POI.

Furthermore, we acknowledge that apparent U.S. consumption decreased from 2018 to 2020.[227] The declines in apparent U.S. consumption, however, do not explain the larger declines in the domestic industry's output during this period, nor do they explain the domestic industry's loss of market share to cumulated subject imports. The significant underselling by subject imports, which resulted in lost sales and market share for the domestic industry, indicate that the decline in demand alone cannot account for the domestic industry's poor performance.

We consequently conclude that other causes cannot explain the injury we have attributed to the cumulated subject imports. We accordingly determine that the domestic industry is materially injured by reason of cumulated subject imports.

VI. Critical Circumstances

A. Legal Standards

In its final antidumping and countervailing duty determinations concerning granular PTFE resin from India, Commerce found that critical circumstances exist with respect to GFL and

[225] CR/PR at Table III-6. We also note that in interim 2021, when subject import market share declined and apparent consumption improved, the domestic industry was able to increase its U.S. shipments, despite reporting ***. CR/PR at Table III-10 and II-7. This demonstrated ability to increase shipments, ***, supports the conclusion that domestic producers also had the ability produce and ship larger volumes of granular PTFE resin during the full years of the POI.

[226] CR/PR at Table C-2.

[227] CR/PR at Table C-2.

all other producers/exporters in India.[228] Because we have determined that the domestic industry is materially injured by reason of subject imports from India, we must further determine "whether the imports subject to the affirmative {Commerce critical circumstances} determination ... are likely to undermine seriously the remedial effect of the antidumping {and/or countervailing duty} order{s} to be issued."[229] The SAA indicates that the Commission is to determine "whether, by massively increasing imports prior to the effective date of relief, the importers have seriously undermined the remedial effect of the order" and specifically "whether the surge in imports prior to the suspension of liquidation, rather than the failure to provide retroactive relief, is likely to seriously undermine the remedial effect of the order."[230] The legislative history for the critical circumstances provision indicates that the provision was designed "to deter exporters whose merchandise is subject to an investigation from circumventing the intent of the law by increasing their exports to the United States during the period between initiation of an investigation and a preliminary determination by {Commerce}."[231] An affirmative critical circumstances determination by the Commission, in conjunction with an affirmative determination of material injury by reason of subject imports, would normally result in the retroactive imposition of duties for those imports subject to the affirmative Commerce critical circumstances determination for a period 90 days prior to the suspension of liquidation.

The statute provides that, in making this determination, the Commission shall consider, among other factors it considers relevant,

> (I) the timing and the volume of the imports,
>
> (II) a rapid increase in inventories of the imports, and
>
> (III) any other circumstances indicating that the remedial effect of the {order} will be seriously undermined.[232]

In considering the timing and volume of subject imports, the Commission's practice is to consider import quantities prior to the filing of the petitions with those subsequent to the filing

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[228] 86 Fed. Reg. 3765 and 3772.

[229] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

[230] SAA at 877.

[231] *ICC Industries, Inc. v United States,* 812 F.2d 694, 700 (Fed. Cir. 1987), *quoting* H.R. Rep. No. 96-317 at 63 (1979), *aff'g* 632 F. Supp. 36 (Ct. Int'l Trade 1986). *See* 19 U.S.C. §§ 1671b(e)(2), 1673b(e)(2).

[232] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

of the petitions using monthly statistics on the record regarding those firms for which Commerce has made an affirmative critical circumstances determination.[233]

B. Party Arguments

Domestic Producers' Arguments. Chemours and Daikin argue in favor of affirmative critical circumstances findings in the antidumping and countervailing duty investigations regarding imports of granular PTFE resin from India.[234] They urge the Commission to utilize 6-month pre-petition and post-petition comparison periods: August 2020-January 2021 and February 2021-July 2021. They contend that the increase in subject imports from India in the post-petition period is intended to evade the disciplining effect of any order.[235] Additionally, they argue that the degree of substitutability between subject imports from India and the domestic like product, the large volume of underselling, vulnerability of the domestic industry, and *** to the United States in previous Commission investigations all support affirmative findings.[236]

Respondents' Arguments. Respondents argue that the timing and volume of subject imports from India support negative critical circumstances findings. Like the Domestic Producers, they contend that the Commission should analyze a six-month period before and after the filing of the petitions, such that the pre-petition period in these investigations should be August 2020-January 2021, and the post-petition period February 2021-July 2021.[237] According to Respondents, the increase in subject import volume from India in the post-petition period is well below that of Commission investigations in which the Commission has made an affirmative critical circumstances finding.[238] Finally, Respondents argue that inventory data support negative critical circumstances determinations because U.S. importers' end-of-

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[233] *See Lined Paper School Supplies from China, India, and Indonesia,* Inv. Nos. 701-TA-442-43, 731-TA-1095-97**,** USITC Pub. 3884 at 46-48 (Sept. 2006); *Carbazole Violet Pigment from China and India,* Inv. Nos. 701-TA-437 and 731-TA-1060-61 (Final), USITC Pub. 3744 at 26 (Dec. 2004); *Certain Frozen Fish Fillets from Vietnam,* Inv. No. 731-TA-1012 (Final), USITC Pub. 3617 at 20-22 (Aug. 2003).

[234] Domestic Producers' Posthearing Br. at Answers to Commissioner Questions, pp. 62-67.

[235] Domestic Producers' Posthearing Br. at Answers to Commissioner Questions, pp. 64-65.

[236] *See* Domestic Producers' Posthearing Br. at Answers to Commissioner Questions, pp. 65-66. Respondents refer to the GLF's projections in the Commission's prior investigations of PTFE from China and India, *PTFE Resin from China and India,* Inv. Nos. 701-TA-588 and 731-TA-1392-1393 (Final), USITC Pub. 4801 (July 2018). *See also PTFE Resin from China and India*—Staff Report, INV-QQ-065, EDIS Doc. 734434 (June 11, 2018).

[237] Respondent's Prehearing Br. at 66.

[238] Respondents' Prehearing Br. at 68.

period inventories for subject imports from India were stable during 2018-2020 and were lower in interim 2021 than in interim 2020.[239]

C. Analysis

On January 25, 2022, Commerce published its final determinations in its antidumping and countervailing duty investigations regarding granular PTFE resin from India and found that critical circumstances exist with respect to imports of granular PTFE resin from GFL and all other producers and exporters in India.[240] Thus, all subject imports from India are subject to both of Commerce's critical circumstances findings.

We first consider the appropriate period for comparison of pre-petition and post-petition levels of subject imports from India. In previous investigations, the Commission has relied on a shorter comparison period when Commerce's preliminary determination applicable to the subject imports at issue fell within the six-month post-petition period the Commission typically considers.[241] That situation arises here and we have thus determined to compare the volume of subject imports five months prior to the filing of the petitions (September 2020-January 2021) with the volume of subject imports in the five months after the filing of the petitions (February 2021- June 2021) for purposes of our critical circumstances analysis in both the antidumping and countervailing duty investigations.[242]

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[239] Respondent's Prehearing Br. at 69.

[240] *Granular Polytetrafluoroethylene Resin From India: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 87 Fed. Reg. 3773 (Jan. 25, 2022); *Granular Polytetrafluoroethylene Resin From India: Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination*, 87 Fed. Reg. 3765 (Jan. 25, 2022).

[241] *Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom,* Inv. Nos. 701-TA-545-547, 731-TA-1291-1297 (Final), USITC Pub. 4638 at 49-50 (Sept. 2016); *Certain Corrosion-Resistance Steel Products from China, India, Italy, Korea, and Taiwan*, Inv. No. 701-TA-534-537 and 731-TA-1274-1278 (Final), USITC Pub. 4630 at 35-40 (July 2016); *Carbon and Certain Steel Wire Rod from China*, Inv. Nos. 701-TA-512, 731-TA-1248 (Final), USITC Pub. 4509 at 25-26 (Jan. 2015) (using five-month periods because preliminary Commerce countervailing duty determination was during the sixth month after the petition).

[242] Commerce's preliminary affirmative critical circumstances determination was early in the sixth month (July 6, 2021). *Granular Polytetrafluoroethylene Resin From India: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination, and Alignment of Final Determination With Final Antidumping Duty Determination,* 86 Fed. Reg. 35479 (July 6, 2021).

Subject imports from India increased from *** pounds in the pre-petition period to *** pounds in the post-petition period, an increase of *** percent.[243] This increase of *** pounds is equivalent to *** percent of apparent U.S. consumption in 2020.[244] End-of-period inventories of subject merchandise from India held by U.S. importers decreased from *** on January 31, 2021, to *** on June, 30, 2021, a decrease of *** percent.[245]

The post-petition period in these investigations corresponds closely with the interim 2021 period during which demand began to recover, as previously discussed.[246] This suggests that some portion of the increase in subject imports from India in the post-petition period is related to overall market conditions. Indeed, the market share of shipments of imports from India was *** percent in interim 2021, which is well within their range during the POI (*** percent to *** percent).[247] Moreover, ending inventories of subject imports from India held by importers decreased in the post-petition period and were lower at the end of interim 2021 than at the end of full-year 2020, both absolutely and as a ratio to subject imports from India, which further suggests that the increase in subject imports from India was, at least in part, related to rebounding demand and was not being stockpiled by importers.[248]

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[243] GFL Americas' U.S. Importer Questionnaire (Final), EDIS Doc. 757410, at II-5d. Based on official Commerce import statistics, which may include out of scope merchandise, subject imports from India increased from 1.3 million pounds in the pre-petition period to 2.4 million pounds in the post-petition period, an increase of 76.2 percent. This increase of 1.0 million pounds equates to *** percent of apparent U.S. consumption in 2020. CR/PR at Tables IV-5 and C-2, *and see Id.* at I-9 n. 25, IV-1 n.2. We have considered the subject import volume relevant to our critical circumstances analysis based upon both questionnaire data and official import statistics. Based on either source, we find that the record in these investigations does not support a finding that subject imports from India subject to Commerce's affirmative critical circumstances findings are likely to undermine seriously the remedial effect of the antidumping and countervailing duty orders.

[244] *Derived from* GFL Americas' U.S. Importer Questionnaire (Final) at II-5d and Table C-2. While the 2020 apparent U.S. consumption data do not fully align with the post-petition period, they do constitute the best information available for evaluating the volume of post-petition imports relative to the size of the market.

[245] CR/PR at Table IV-6.

[246] Apparent U.S. consumption by quantity was *** pounds in the first half (Jan.-June) of 2020, *** pounds in the second half (July-Dec.) of 2020, and *** pounds in the first half of 2021. *Derived from* CR/PR at Table C-2. Thus, apparent U.S. consumption increased by *** percent from the second half of 2020 to the first half of 2021, which closely correlates to the pre- and post-petition periods we are considering.

[247] CR/PR at Table C-2.

[248] CR/PR at Table VII-11. U.S. importers' ending inventories of imports from India were *** in 2020 and *** in interim 2021. As a ratio to imports from India, inventories were *** percent in 2020 and *** percent in interim 2021. *Id.*

In light of these considerations, we do not find that subject imports from India subject to Commerce's affirmative critical circumstances findings are likely to undermine seriously the remedial effect of the antidumping and countervailing duty orders.[249] Consequently, we determine that critical circumstances do not exist with respect to subject imports from India in either the antidumping duty or countervailing duty investigation.

VII. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of granular PTFE resin from India and Russia that have been found by Commerce to be subsidized by the governments of India and Russia and sold in the United States at less than fair value. We also find that critical circumstances do not exist with respect to imports of granular PTFE resin from India that are subject to Commerce's final affirmative critical circumstances determinations.

[249] Chair Kearns and Commissioner Karpel concur that the record in these investigations does not support a finding that the imports subject to Commerce's critical circumstance finding would undermine seriously the remedial effects of the order. Chair Kearns and Commissioner Karpel observe that the statute directs the Commission to consider the following factors in making this determination: "the timing and volume the imports, a rapid increase in the inventories of the imports, and any other circumstances indicating that the remedial effect of the antidumping order will be seriously undermined." 19 U.S.C. §1673d(b)(4)(A)(ii). In their analysis, they would therefore take into account a number of factors as appropriate to a given investigation (as directed by the statute) and do not necessarily give precedence to the pre- and post-petition subject import volumes. Among the factors they may consider, depending on the facts of the investigation and the parties' arguments, are subject import volumes relative to consumption or production, monthly changes in subject import volume, subject import inventories (both absolute and relative to imports or shipments of imports), purchaser inventories, pricing, and the domestic industry's performance. Our finding in these investigations is based on record evidence regarding factors including pre-and post-petition subject import volumes as well as monthly changes in subject import volumes, subject import inventories, and pricing trends. In addition to the factors discussed in the Views, Chair Kearns and Commissioner Karpel also considered that the underselling margins based on pricing data of the subject imports from India did not increase during interim 2021, and the AUVs of Indian imports increased during interim 2021, which indicates that subject imports did not become more aggressively priced in the period following the filing of the petition.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Daikin America, Inc. ("Daikin"), Orangeburg, New York, on January 27, 2021, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of granular polytetrafluoroethylene resin ("granular PTFE")[1] from India and Russia. Table I-1 presents information relating to the background of these investigations.[2] [3]

Table I-1
Granular PTFE: Information relating to the background and schedule of this proceeding

Effective date	Action
January 27, 2021	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (86 FR 7876, February 2, 2021)
February 16, 2021	Commerce's notice of initiation (86 FR 10926 and 10931, February 21, 2021)
March 15, 2021	Commission's preliminary determinations (86 FR 14957, March 19, 2021)
July 6, 2021	Commerce's preliminary CVD determinations (86 FR 35476 and 35479, July 6, 2021)
September 2, 2021	Commerce's preliminary AD determinations (86 FR 49297 and 49299, September 2, 2021); scheduling of final phase of Commission investigations (86 FR 51378, September 15, 2021)
January 18, 2022	Commerce's final determinations (87 FR 3764, 87 FR 3765, 87 FR 3772, and 87 FR 3774, January 25, 2022)
January 19, 2022	Commission's hearing
February 16, 2022	Commission's vote
March 8, 2022	Commission's views

[1] See the section entitled "The subject merchandise" in Part I of this report for a complete description of the merchandise subject in this proceeding.

[2] Pertinent Federal Register notices are referenced in appendix A, and may be found at the Commission's website (www.usitc.gov).

[3] Appendix B presents the witnesses who appeared at the Commission's hearing.

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.*

[4] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part I of this report presents information on the subject merchandise, subsidy/dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of U.S. producers. Part VII presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

Market summary

Granular PTFE, often referred to as molding powder, is typically processed to form stock shapes, which can then be machined or cut into products such as seals, bearings, gaskets, bushings, corrosion resistant linings, lab equipment, piping components, piston rings, and diaphragms.[6] U.S. industry data presented in this staff report include both integrated producers and compounders.[7] Daikin and The Chemours Company FC LLC ("Chemours") are the only known U.S. integrated producers of granular PTFE[8] and ***

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

[6] Hearing transcript, p. 17 (Rubin).

[7] Integrated producers are firms that chemically manufacture granular PTFE resin from raw materials. An integrated producer may also further manufacture or process its own granular PTFE resin production by filling, modifying, or compounding prior to commercial sale or internal use. Compounders are firms that purchase granular PTFE resin, whether domestic, purchased, or imported, and mix it with another substance in the United States, then sell this compounded granular PTFE resin in the commercial market.

[8] Petitions, pp. I-2 to I-3.

is the leading U.S. compounder. The leading producers of granular PTFE outside the United States include Gujarat Fluorochemicals Limited ("GFL") of India and joint stock company "HaloPolymer Perm" and limited liability company HaloPolymer Kirovo-Chepetsk ("HaloPolymer") of Russia. The leading U.S. importer of granular PTFE from India is ***,[9] while the leading importer of granular PTFE from Russia is ***. Leading importers of granular PTFE from nonsubject countries (primarily China and the Netherlands) include ***. U.S. purchasers of granular PTFE are firms that manufacture PTFE compounds or manufacture products using granular PTFE as a raw material; leading purchasers include ***.

Apparent U.S. consumption of granular PTFE totaled approximately *** pounds ($***) in 2020. Currently, two integrated producers and four compounders are known to produce granular PTFE in the United States. U.S. producers' U.S. shipments of granular PTFE totaled *** pounds ($***) in 2020, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 6.6 million pounds ($25.2 million) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 3.4 million ($24.9 million) in 2020 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of six firms (two integrated producers and four compounders) that accounted for all known U.S. production of granular PTFE during 2020. U.S. imports are based on official import statistics and the questionnaire responses of 12 firms that accounted for the vast majority of U.S. imports of granular PTFE from subject sources and an estimated *** percent of granular PTFE imports from nonsubject sources in 2020.

[9] ***.

Previous and related investigations

Granular PTFE has been the subject of two prior countervailing and antidumping duty investigations in the United States.

On November 6, 1987, E.I. du Pont de Nemours & Co., Inc. ("DuPont") filed petitions with Commerce and the Commission alleging that an industry in the United States was materially injured by reason of dumped imports of granular PTFE resin from Italy and Japan.[10] The Commission made its final affirmative injury determinations in August 1988,[11] and Commerce issued antidumping duty orders on August 24, 1988 (Japan) and August 30, 1988 (Italy).[12] Commerce revoked the antidumping duty order on granular PTFE resin from Japan in 2011 and the antidumping duty order on granular PTFE resin from Italy in 2016, as the domestic interested parties did not participate in Commerce's second and third five-year reviews, respectively.[13]

On September 29, 2017, Chemours filed petitions with Commerce and the Commission alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and LTFV imports of PTFE resin, including granular PTFE, from China and India.[14] On May 21, 2018, Commerce determined that imports of PTFE resin from India were being subsidized by the government of India.[15] The Commission determined on July 6, 2018, that the domestic industry was not materially injured or threatened with material injury, and the establishment of an industry in the United States was not materially retarded by reason of subsidized imports of PTFE resin from India.[16] On September 26, 2018, Commerce determined that imports of PTFE resin from China and India were being sold at LTFV.[17] The Commission determined on November 13, 2018 that the domestic industry was not materially

[10] Granular Polytetrafluoroethylene Resin from Italy and Japan, Inv. Nos. 731-TA-385 and 386 (Final), USITC Pub. 2112, August 1988, p. I-1.

[11] Ibid., p. 1.

[12] 53 FR 33163, August 30, 1988; and 53 FR 32267, August 24, 1988. The order on granular PTFE resin from Italy was later amended to include wet raw polymer PTFE. 58 FR 26100, April 30, 1993.

[13] 76 FR 3614, January 20, 2011; and 81 FR 53119, August 11, 2016.

[14] The scope in those investigations covered PTFE resin, including but not limited to granular, dispersion, or coagulated dispersion (also known as fine powder). 83 FR 23424, May 21, 2018.

[15] 83 FR 23423, May 21, 2018.

[16] 83 FR 32150, July 11, 2018.

[17] 83 FR 48590 and 48594, September 26, 2018.

injured or threatened with material injury by reason of LTFV imports of PTFE resin from China and India.[18] [19]

Nature and extent of subsidies and sales at LTFV

Subsidies

Commerce published notices in the Federal Register of its preliminary determination on July 6, 2021, and its final determination on January 25, 2022, of countervailable subsidies for producers and exporters of granular PTFE from India. [20] Table I-2 presents Commerce's findings of subsidization of granular PTFE in India.

Table I-2
Granular PTFE: Commerce's subsidy determination with respect to imports from India

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy margin (percent)
Gujarat Fluorochemicals Limited	4.75	31.89
All others	4.75	31.89

Source: 86 FR 35479, July 6, 2021, and 87 FR 3765, January 25, 2022.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

[18] 83 FR 62603, December 4, 2018.

[19] The Commissioned defined a single domestic like product, coextensive with the scope of the investigations. The Commission also found that processors engage in sufficient production-related activity to be considered producers of the domestic like product. The Commission defined a single domestic industry consisting of all U.S. producers and processors of PTFE resin and found that appropriate circumstances existed to exclude GFL from the domestic industry as a related party. Polytetrafluoroethylene Resin from China and India, Inv. Nos. 701-TA-588 and 731-TA1392-1393 (Final), USITC Publication 4801, July 2018, pp. 10, 13, 17. For purposes of the opinion, the Commission referred to all blenders, fillers, and compounders as "processors." Ibid., p. 11 n.71.

[20] 86 FR 35479, July 6, 2021, and 87 FR 3765, January 25, 2022.

Commerce published notices in the Federal Register of its preliminary determination on July 6, 2021, and its final determination on January 25, 2022, of countervailable subsidies for producers and exporters of granular PTFE from Russia.[21] Table I-3 presents Commerce's findings of subsidization of granular PTFE in Russia.

Table I-3
Granular PTFE: Commerce's subsidy determination with respect to imports from Russia

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy margin (percent)
Joint Stock Company "HaloPolymer"	2.36	2.53
All others	2.36	2.53

Source: 86 FR 35476, July 6, 2021, and 87 FR 3764, January 25, 2022.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Sales at LTFV

Commerce published notices in the Federal Register of its preliminary determination on September 2, 2021, and its final determination on January 25, 2022, of sales at LTFV with respect to imports from India.[22] Table I-4 presents Commerce's dumping margins with respect to imports of granular PTFE from India.

Table I-4
Granular PTFE: Commerce's weighted-average LTFV margins with respect to imports from India

Exporter/producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Gujarat Fluorochemicals	13.09	13.09
All others	13.09	13.09

Source: 86 FR 49299, September 2, 2021, and 87 FR 3773, January 25, 2022.

Commerce published notices in the Federal Register of its preliminary determination on September 2, 2021, and its final determination on January 25, 2022, of sales at LTFV with respect to imports from Russia.[23] Table I-5 presents Commerce's dumping margins with respect to imports of granular PTFE from Russia.

[21] 86 FR 35476, July 6, 2021, and 87 FR 3764, January 25, 2022.
[22] 86 FR 49299, September 2, 2021, and 87 FR 3773, January 25, 2022.
[23] 86 FR 49297, September 2, 2021, and 87 FR 3774, January 25, 2022.

Table I-5
Granular PTFE: Commerce's weighted-average LTFV margins with respect to imports from Russia

Exporter/producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
Halopolymer OJSC	17.99	17.99
All others	17.99	17.99

Source: 86 FR 49297, September 2, 2021, and 87 FR 3774, January 25, 2022.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[24]

The product covered by th investigation is granular polytetrafluoroethylene (PTFE) resin. Granular PTFE resin is covered by the scope of this investigation whether filled or unfilled, whether or not modified, and whether or not containing co-polymer, additives, pigments, or other materials. Also included is PTFE wet raw polymer. The chemical formula for granular PTFE resin is $C_2 F_4$, and the Chemical Abstracts Service (CAS) Registry number is 9002–84–0.

Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by filling, modifying, compounding, packaging with another product, or performing any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the granular PTFE resin.

The product covered by this investigation does not include dispersion or coagulated dispersion (also known as fine powder) PTFE.

PTFE further processed into micropowder, having particle size typically ranging from 1 to 25 microns, and a melt-flow rate no less than 0.1 gram/10 minutes, is excluded from the scope of this investigation.

[24] 87 FR 3764, 87 FR 3765, 87 FR 3772, and 87 FR 3774, January 25, 2022.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under statistical reporting number 3904.61.0010.[25] It may also be imported under statistical reporting number 3904.69.5000, when, for example, there are certain blends of polymers where the PTFE component is less than 95 percent by weight or in the case of certain copolymers.[26] PTFE resin of subheading 3904.61.00 may contain additives, such as fillers, coloring matter, stabilizers, and plasticizers chiefly intended to give the finished product special physical properties or other desirable characteristics. Small amounts of additives or impurities do not change the classification.[27] If a mixture or blend of different resins includes PTFE and the PTFE is at least 95 percent by weight, then it is classified in subheading 3904.61.00.[28] PTFE resin may meet the definition of a chemically modified polymer for purposes of Chapter 39 subheading Note 1 of

[25] For the purposes of statistical reporting number 3904.61.0010, the term "granular" refers to polytetrafluoroethylene (PTFE) resins and raw polymer produced by suspension polymerization as determined by ASTM D 4894-98a or PTFE compounds produced therefrom as determined by ASTM D 4745, or micropowders from such resins or raw polymer as determined by ASTM D 5675 (Group 1, Class 1,4,6). Chapter 39 statistical note 1, HTSUS, Basic Revision 10, USITC Publication 5267, December 2021. Micropowder, although imported under HTS 3904.61.0010, is outside the scope of these investigations.

[26] Customs Rulings HQ 085931 (February 6, 1990), N054319 (March 24, 2009), and N054316 (March 24, 2009).

[27] In HQ 952836 (February 19, 1993), PTFE mixed with irregularly shaped lumps containing "contaminants such as oil, dirt or other unwanted material that must be physically separated," were classified under HTS subheading 3904.61. U.S. Customs and Border Protection noted that "where plastics are in a primary form in their condition as imported, the presence of contaminants does not qualify the plastic as waste of HTS heading 3915." HQ 561978 (December 22, 2000) notes that in one case, mixing or blending other materials with PTFE to create filled PTFE did not constitute a substantial transformation. If the PTFE product is at least 95 percent PTFE by weight, whether filled or unfilled, it is classified in subheading 3904.61.00.

[28] See HQ 561978 (December 22, 2000). In HQ 085931 (February 6, 1990), "other" fluoropolymer resin and PTFE resin blended in the United Kingdom were classified under subheading 3904.69.50 because the PTFE content was less than 95 percent by weight.

the HTS.[29] The product may meet the definition of a copolymer for purposes of the same chapter, Note 4, and in such cases, the classification is dependent on the monomer with the greatest percentage weight.[30] [31]

[29] Chemically modified polymers (excluding graft polymers) are those in which only appendages to the main polymer chain have been changed by chemical reaction. HTSUS Chapter 39, Note 5. "Chemically modified polymers are to be classified in the subheading named 'Other,' provided that the chemically modified polymers are not more specifically covered by another subheading." HTSUS, Chapter 39, Subheading Note 1 (a)(3), HTSUS, Basic Revision 10, USITC Publication 5267, December 2021. An example of a chemically modified polymer is referenced in N288633 (August 7, 2017) in which more chloride atoms are added onto polyvinylchloride by covalently bonding them.

Polymers that are chemically modified to form reactive epoxide groups such that they become epoxide resins (see the Explanatory Note to heading 3907) are to be classified under heading 3907. For example, phenolic resins chemically modified by epichlorohydrin would be classified as epoxide resins and not as chemically modified phenolic resins in heading 3909. A polymer blend in which any one of the constituent polymers has been chemically modified is considered to be chemically modified in its entirety. Chemically modified granular PTFE would be imported under statistical reporting number 3904.61.0090 (USITC staff communication with the National Import Specialist, Customs and Border Protection, March 3, 2021).

[30] The expression "copolymers" covers all polymers in which no single monomer contributes 95 percent or more by weight to the total polymer content. Except where the context otherwise requires, copolymers (including co-polycondensates, co-polyaddition products, block copolymers and graft copolymers) and polymer blends are to be classified in the heading covering polymers of that comonomer unit which predominates by weight over every other single comonomer unit. Constituent comonomer units of polymers falling in the same heading shall be taken together. If no single comonomer predominates, copolymers or polymer blends, as the case may be, are to be classified in the heading which occurs last in numerical order among those which equally merit consideration. Chapter 39, Note 4, HTSUS, Basic Revision 10, USITC Publication 5267, December 2021. The rules for copolymers state that they are classified according to the polymer that predominates by weight. Therefore, as long and the fluoropolymer component is the largest percentage by weight then it is imported under 3904.69.5000. However, if a fluoropolymer is in a copolymer with a polymer in another heading that predominates, then it would be classified according to the copolymer rules but within the other HTSUS heading (USITC staff communication with the National Import Specialist, Customs and Border Protection, March 3, 2021).

[31] N054319 (March 24, 2009) references a copolymer in which the tetrafluoroethylene (a monomer in these investigations) predominates by weight. N054316 (March 24, 2009) references a copolymer in which the tetrafluoroethylene (a monomer in these investigations) and difluoroethylene derived monomer units taken together predominate by weight. Both products are classified under HTS 3904.69.5000.

The 2021 general rate of duty is 5.8 percent *ad valorem* for subheading 3904.61.00 and 6.5 percent *ad valorem* for subheading 3904.69.50.[32] PTFE resin produced in China is subject to an additional 25 percent ad valorem duty pursuant to Section 301 of the Trade Act of 1974.[33] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

The product

Description and applications

PTFE is a crystalline polymer consisting of repeating units of tetrafluoroethylene ("TFE"), or C_2F_4.[34] Producers of PTFE use specific trade names for their PTFE products, including Polyflon™, a registered trademark of Daikin, and Teflon®, a registered trademark of Chemours,[35] although every producer of PTFE resin has its own specific trade name associated with the product.[36] PTFE resin has a variety of end-use applications due to its chemical inertness, heat and chemical resistance, electrical insulation properties, low coefficient of

[32] The temporary duty suspensions and reductions enacted by the Miscellaneous Tariff Bill Act of 2018 expired on December 31, 2020. On August 10, 2020, in accordance with the American Manufacturing Competitiveness Act, the Commission delivered its final report on miscellaneous tariff bill petitions that sought to extend existing provisions and request new duty suspensions and reductions (see USITC Publication 5097). However, Congress has not introduced legislation pursuant to that report. Therefore, there are currently no active temporary duty reductions or suspensions in place for the subject product.

[33] The Section 301 duties for goods produced in China became effective on August 23, 2018; 83 FR 40823, pp. 40823-40838. The U.S. Trade Representative has not granted any exclusions for subheading 3904.69.50 and granted one exclusion for HTS 3904.61.00 from Section 301 duties under 9903.88.02 during the period of these investigations. The one exclusion is polytetrafluoroethylene ($(C_2F_4)_n$), having a particle size of 5 to 500 microns and a melting point of 315 to 329 degrees Celsius (described in statistical reporting number 3904.61.0090). Chapter 99, footnote 20(ggg)(1), p. 99-III-186, Harmonized Tariff Schedule of the United States, Basic Revision 10, USITC Publication 5267, December 2021. The exclusion published in the Federal Register July 31, 2019 was granted retroactively to August 23, 2018 and set to expire in July 2020, but the USTR extended the exclusion until December 31, 2020. It is currently expired and subject to Section 301 duties. 84 FR 37381, July 31, 2019; See Diaz, Jennifer, "China Tariff Update, List 2 Exclusions Extended," Customs and International Trade Law, July 31, 2020.

[34] Chemical Abstracts Service ("CAS") registry number for PTFE is 9002-84-0.

[35] Petition, p. I-6; Encyclopedia.com, "Polytetrafluoroethylene" https://www.encyclopedia.com/science/academic-and-educational-journals/polytetrafluoroethylene, retrieved January 28, 2022.

[36] For example, PTFE manufactured by respondent GFL is sold under the trade name Inoflon®; PTFE manufactured by Dyneon is sold under the trade name "Dyneon TF"; PTFE manufactured by Solvay is sold under the trade name "Algoflon." Ibid; Petition, exhibits I-19, I-20, I-21, I-24, I-25.

friction, and functionality over a wide temperature range (-40°C to 260°C).[37] PTFE's properties are attributable to its strong interatomic carbon-fluorine bonds, making the resin resistant to oxidation and reaction with other chemicals (e.g., strong acids, alkalis, and oxidizing agents).[38] In order to benefit from PTFE's properties, the TFE monomer must be polymerized to an extremely high molecular weight.[39]

The scope of these investigations includes one primary form of PTFE resin—granular.[40] Excluded from the scope are other forms generated by different technical standards, which are dispersion,[41] fine powder,[42] and micropowder.[43] Properties are shown in table I-6.[44]

[37] Petition, p. I-6; USITC publication 4801, p. I-8.

[38] Fluorogistx, "*Properties"* http://www.fluorogistx.com/applications-na/properties/, retrieved January 28, 2022.

[39] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved January 28, 2022.

[40] Granular PTFE is generated by technical standard ASTM D 4894. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[41] Technical standard ASTM designation D 4441. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[42] Technical standard ASTM designation D 4895. Petition, p. I-7; Conference transcript, p. 16 (Smith); Petitioner's postconference brief, pp. 8-9.

[43] The HTSUS references micropowder as determined by ASTM D 5675 (Group 1, Class 1,4,6). HTSUS (2021), Chapter 39 statistical note 1, Basic Revision 10, USITC Publication 5267, December 2021.

[44] Petition, p. 16. Fine powder can also be referred to as coagulated or agglomerated dispersion. Conference transcript, p. 5 (Meisner), p. 11 (Cagle), p. 102 (Smith).

Table I-6:
PTFE resin: Particle sizes and bulk densities

Particle size in (micron, µm); bulk density in gram/liter, g/L

Form of PTFE	Minimum particle size	Maximum particle size	Bulk density minimum	Bulk density maximum
Dispersion	0.05	0.5	1,246	1,520
Granular	20	1050	250	930
Coagulated Dispersion (also called fine powder or fine cut powder)	370	675	460	550
Micropowder (also called micronized powder)[45]	1	20	300	460

Source: Petition, Exhibit I-25; ITC staff communication with Counsel for petitioner, March 8, 2021; Fuzhou Topda New Material Co., "PTFE Micropowders" and "Brochures: PTFE Powders PTFE Dispersions" https://www.fluorochemie.com/products/ptfe-powders-ptfe-dipsersion/ptfe-micropowder and https://www.fluorochemie.com/brochures, retrieved January 28, 2022. The maximum particle size for granular PTFE can be 1050 microns, as designated in ASTM D 4894, Petitioner's prehearing brief, ex. 5.

Note: A micron is one millionth of a meter.

A commonly recognized form of PTFE resin that falls outside the scope of these investigations is micronized powder, or micropowder. Micronized powder represents low molecular weight PTFE,[46] and has an average particle size that ranges from 1 – 20 µm.[47] Because micronized powder has a lower molecular weight, the material loses some strength and tensile properties. A characteristic that distinguishes PTFE micronized powder from other PTFE forms is that it has a melt flow rate that is greater than 0.1 g/10 min,[48] whereas the other three forms of PTFE resin have a melt flow of zero.[49]

[45] Fuzhou Topda New Material Co., "PTFE Micropowders" and "Brochures: PTFE Powders PTFE Dispersions" https://www.fluorochemie.com/products/ptfe-powders-ptfe-dipsersion/ptfe-micropowder and https://www.fluorochemie.com/brochures, respectively, retrieved January 28, 2022.

[46] Solvay, "Polymist and Agloflon L PTFE Micronized Powders" https://www.solvay.com/en/brands/polymist-and-algoflon-l-ptfe-micronized-powders, retrieved January 28, 2022.

[47] Jannerfeldt, Claes Gustav; Pabon, Jean-Jacques; Nelissen, Jo Ann. Particles comprising polytetrafluoroethylene and perfluoropolyether. U.S. Patent Application 20170114190 A1 filed June 9, 2015, and published April 27, 2017. https://patents.google.com/patent/US20170114190?oq=20170114190, retrieved January 28, 2022.

[48] Melt flow is the measure of the ease of flow of the melt of a thermoplastic polymer. Jannerfeldt, Claes Gustav, Pabon, Jean-Jacques; Nelissen, Jo Ann. Particles comprising polytetrafluoroethylene and perfluoropolyether. U.S. Patent Application 20170114190 A1 filed June 9, 2015, and published April 27, 2017. https://patents.google.com/patent/US20170114190?oq=20170114190, retrieved January 28, 2022.

[49] PTFE resins enter a 'gel' state at 621°F (327 °C), which lends to a measure of '0' for melt flow (i.e., there is no flow to measure because it is not liquid enough), Ibid.

Each form of PTFE resin is sold in a variety of grades[50] to obtain different properties for usefulness in specific applications.[51] End uses for PTFE include the following: gaskets and parts; film or tape; pipe, tube, hose components; wire coating or insulation; coatings for food applications; fabrics, yarns, or membranes.[52] Dispersion PTFE resin is customarily used in coating applications.[53]

'Filled' PTFE resin refers to PTFE resin that is compounded with additives including, but not limited to, carbon, graphite, glass fiber, stainless steel, bronze, aromatic polyester, or pigments.[54] Filling a PTFE resin can enhance the mechanical properties, such as resistance to abrasion.[55] The most common filler is glass, which is usually sold in compounds with a percentage of filler of 15-25 percent.[56] In the industry, filling is typically carried out by a compounder. A compounder is a firm that mixes PTFE with another substance.[57]

Chemically, the forms of PTFE resin have similar chemical compositions and chemical properties;[58] however, physically, the forms of PTFE resin shown in table I-6 possess somewhat different characteristics.[59] Both granular (or free flow) and fine powder (or fine cut) PTFE are white powders at room temperature of different particle sizes. Fine powder PTFE resin smears due to it having a 'sheer' physical property.[60] Granular and fine powder PTFE resin have a high melting point and melt viscosity. Consequently, granular PTFE resin cannot be processed by conventional thermoplastic methods, such as injection molding or extrusion. Instead, granular PTFE resin is typically processed by compression molding or ram extrusion, followed by sintering (heating to just below the melting point to fuse individual particles together).

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[50] Different formulation techniques are utilized to elicit various grades in the three forms of PTFE resin. Fabrication techniques for granular resins include molding, sintering, and ram extrusion. Fine powdered resins undergo paste-extrusion and dispersions can undergo dip coating and coagulation.

[51] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved January 28, 2022.

[52] Petition, Exhibit 17, pp. 2-8.

[53] Petition, Exhibit 11, p. 4.

[54] Gangal, S.V., Brothers, P.D. "*Perfluorinated Polymers, Polytetrafluoroethylene"* Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved January 28, 2022; Petitioner's postconference brief, Answers to staff questions, pp. 20-21.

[55] Ibid.

[56] Petitioner's postconference brief, Answers to staff questions, p. 21.

[57] Conference transcript, p. 39 (Meisner). In the context of this investigation, processors are referred to as compounders or fillers, terms that mean the same thing. Conference transcript, p. 38 (Meisner).

[58] These properties include the same chemical formula and CAS number.

[59] Petition, Exhibit 11, pp. 2-4.

[60] Conference transcript, p. 35 (Cagle).

Compression molded products are typically fabricated into basic shapes, e.g., cylinders and cubes. These shapes are then machined into seals, bearings, bushings, piston rings, and diaphragms. Fine powder PTFE resin has the same properties of high melting point and viscosity. However, due to the small particle size, fine powder PTFE resin may be processed into a finished product by paste extrusion.[61] Also, dispersion PTFE resin can be directly applied as a coating, or a thin coating may be dried and removed to create a film.

Manufacturing processes

All forms of PTFE resin start with the production of TFE. [62] TFE is produced with fluorospar (CaF_2), sulfuric acid, and chloroform. In order to produce TFE, chloroform ($CHCl_3$), is fluorinated through a reaction with hydrogen fluoride (HF), produced from fluorospar, to produce chlorodifluoromethane (HCF_2Cl). Chlorodifluoromethane is also called "R-22."[63] R-22 is subsequently pyrolized[64] at 550-750°C, producing TFE and hydrochloric acid (HCl), as shown in figure I-1.

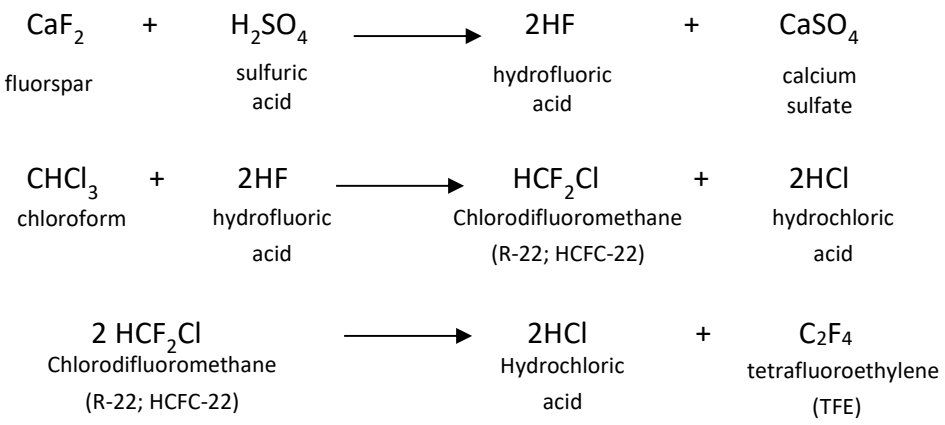
[61] Fine powder PTFE is often extruded as a paste to make materials such as glass fabric laminate and filtration membranes. Conference transcript, p. 16 (Cagle).

[62] TFE, the simplest perfluorinated alkene, is a colorless and odorless gas that is unstable (it will decompose to C and CF4) and can form explosive peroxides in contact with air. TFE's instability makes it dangerous to transport, so TFE and PTFE production are usually on the same site. In fact, the domestic producers of TFE are also the only known domestic producers of PTFE. Conference transcript, pp. 9, 39 (Cagle); Petition, Exhibit I-11, p. 1.

[63] R-22 can also be referred to as HCFC-22. Pubchem, "Chlorodifluoromethane" https://pubchem.ncbi.nlm.nih.gov/compound/Chlorodifluoromethane#section=MeSH-Entry-Terms, retrieved January 28, 2022.

[64] Pyrolysis occurs in the absence or near absence of oxygen and is the chemical decomposition of organic (carbon-based) materials through the application of heat. https://www.britannica.com/science/pyrolysis, retrieved January 28, 2022.

Figure I-1
Granular PTFE: Manufacturing process to produce the monomer tetrafluoroethylene (TFE)



Source: Based on conference transcript, pp. 94-99 (Rubin); hearing transcript, p. 25 (Cagle); and staff communication with GFL and Halopolymer, January 27, 2022.

Chemours begins its manufacturing process by reacting fluorspar with sulfuric acid (as shown at the top of figure I-1).[65] Daikin begins its manufacturing process by reacting chloroform and hydrofluoric acid (HF) (as shown in the middle section of figure I-1). Daikin does not synthesize chloroform or HF and instead purchases them from independent supply chains. The hydrochloric acid that is generated as a result of the chemical reaction is sold.[66] The TFE monomer is not only used to produce PTFE, but it is also used to produce other products at Daikin's factory.[67] Only one grade of granular PTFE is produced at Daikin's Decatur, Alabama plant, and it is termed M-17, general industrial grade (they also make PTFE forms other than granular at that plant).[68]

[65] Chemours generates hydrofluoric acid at its plant in La Porte, Texas. Conference transcript, p. 99 (Rubin).

[66] Conference transcript, pp. 74, 85, 95-96 (Rubin).

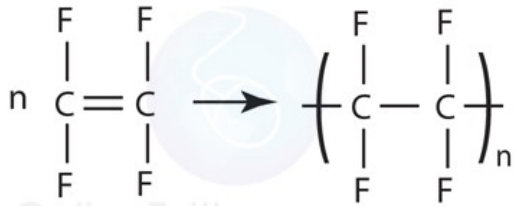
[67] PTFE is produced on the scale of thousands of gallons. Conference transcript, pp. 74-75, 108 (Cagle).

[68] Granular PTFE is considered a very mature product line that tends to move with gross domestic product (GDP) trends. Conference transcript, pp. 80, 83 (Rubin). M-17 is used in many industrial applications. Hearing transcript, p. 37 (Jacob), p. 268 (Drake); Daikin's technical datasheet, Respondents' prehearing brief, exhibit 1; Petitioner's posthearing brief, p. 3.

Chemours is a larger company than Daikin in terms of granular PTFE operations in the United States, and Chemours makes more than one grade of PTFE. Grade is not defined as quality, but as product characteristics such as different particle size and different bulk density.[69]

Russian producer Halopolymer and Indian producer GFL use the same manufacturing process as shown in figure I-1.[70] Figure I-2 shows monomers of TFE polymerized to PTFE.[71]

Figure I-2
Granular PTFE: TFE monomers react to form PTFE



Tetrafluoroethylene Polytetrafluoroethylene

n = number of repeating units of the monomer TFE, F = fluorine, and C = carbon

Source: Pocetna, https://www.factory2021.ru/content?c=monomer%20of%20teflon&id=13, retrieved March 3, 2021.

There are two separate methods utilized by the industry to polymerize TFE into PTFE: (1) suspension polymerization[72] and (2) dispersion or emulsion polymerization[73] (figure I-3).

[69] Conference transcript, p. 82 (Rubin).

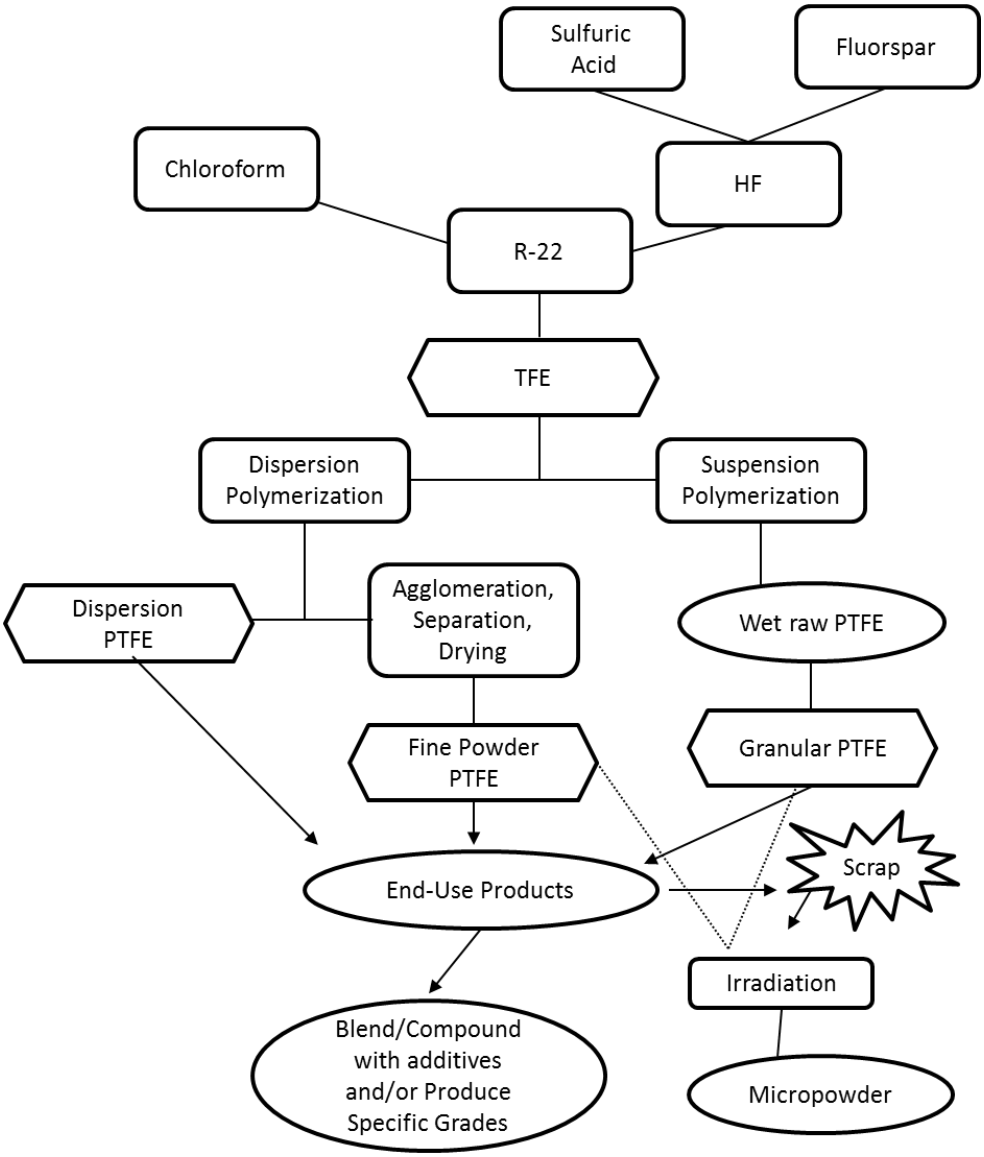
[70] Staff communication with GFL and Halopolymer, January 27, 2022. GFL notes it HCF_2Cl is converted to TFE (C_2F_4) monomer by a steam pyrolysis process.

[71] GFL notes that it GFL is producing granular PTFE by polymerization process where monomer of tetrafluoroethylene (TFE) is coupled by n-number of monomers to form into by suspension Polymerization process with water and chemical initiators. Staff communication with GFL and Halopolymer, January 27, 2022.

[72] Conference transcript, Daikin's submitted testimony, Exhibit 6. Emulsion and dispersion polymerization are the same process. Conference transcript, p. 101 (Smith).

[73] Conference transcript, p. 101 (Smith).

Figure I-3
Granular PTFE: Processing pathways for the different forms of PTFE resin



Source: USITC publication 4018, p. I-13. The terms dispersion and emulsion polymerization are used interchangeably. Conference transcript, p. 101 (Smith).

Granular PTFE resin is produced from TFE through suspension polymerization. The process, which involves vigorous agitation and uses little or no surfactant to produce a precipitate resin, yields a polymer that consists of a repeating chain of TFE (C_2F_4).

After polymerization, the wet polymer PTFE resembles string-like particles of raw polymer in a milky white solution. The particles are then cut to achieve the desired particle size, agglomerated, and dried. The dried resin can then be ground to produce granular PTFE resin, or ground and heated to produce pre-sintered PTFE resin.[74] The result of this process is a granular or powder product that typically ranges in particle size from 20-650 µm and has a bulk density of 250-700 grams per liter (g/L), depending upon the end-use application, as denoted earlier in table I-6. It can be sold in several different grades, including various sizes of powder, pre-sintered powders, pellets, and compounded molding powders containing fillers and pigments, such as fiberglass, carbon, bronze, or carbon black.[75]

PTFE dispersions are obtained by dispersion polymerization. This process involves mild agitation to avoid coagulation and to keep the particles separated and suspended in solution. Surfactants are also added to keep the particles dispersed in the solution.[76] Following polymerization, additional surfactants may be added to form a stable aqueous dispersion of approximately 60 percent PTFE in water. This process yields a solution similar in appearance and consistency to milk. The dispersion may be packaged and sold as PTFE aqueous dispersion. Alternatively, the suspended particles can be agglomerated, separated, and dried to produce a fine powder.[77] Fine powder, despite the name, is generally larger in particle size than granular PTFE resin. As described earlier in table I-6, fine powder PTFE typically ranges in particle size from 370-675 µm and a bulk density of 460-550 g/L.

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[74] Gangal, S.V., Brothers, P.D. "Perfluorinated Polymers, Polytetrafluoroethylene" Kirk-Othmer Encyclopedia of Chemical Technology, https://doi.org/10.1002/0471440264.pst233.pub2, retrieved January 28, 2022.

[75] Petition, Exhibit 11, p. 2. Compounded molding powder, or "filled" PTFE resin, is produced by mixing granular PTFE resin with inorganic fillers. Chemours sells multiple grades. Chemours, "Teflon PTFE Granular Moulding Powders," https://www.teflon.com/en/products/resins/ptfe-granular, retrieved January 28, 2022. Daikin only produces one grade of granular PTFE it terms industrial grade, M-17. Daikin technical data sheets and hearing transcript, pp. 37-38 (Jacob).

[76] Historically perfluorinated octanoic acid ("PFOA") was the surfactant of choice, but Chemours has eliminated the use of PFOA in their production, instead utilizing GenX and LX technologies. Some Chinese companies may still use PFOA.

[77] Petition, Exhibit 11, pp. 5-6.

The production of granular PTFE is not performed on the same equipment as fine powder and dispersion PTFE.[78] Daikin has dedicated employees that run the granular operations and granular equipment.[79] As noted above, all forms of PTFE resin may be compounded[80] with additives to produce filled PTFE resin. Compounding does not involve a chemical reaction, so it does not need to occur on the same site as TFE production. It is a blending operation that involves significantly less expense and investment than manufacturing the PTFE resin.[81]

The international standard for specification of granular PTFE is from ASTM D 4894. It classifies product into six main types. The classification is based upon particle size, bulk density, water content, melting peak temperature, maximum thermal stability index, specific gravity, minimum tensile strength, and minimum percent elongation at break.[82] Some of the standards are the same for all six types. For example, to meet the specification for granular PTFE, all six types have the same standard of a maximum water content of 0.04 percent. Of the six types, type I is a general-purpose material that has a lower standard of tensile strength and elongation at break compared to the other types. Type II is a finely divided (same as fine cut and low flow) resin, Type III is a modified resin (either fine cut or free flowing), Type IV is a free-flowing resin, Type V is a presintered resin, and Type VI is not presintered and used for ram extrusion only.

In the companies' technical data sheets, the standards to measure product characteristics are listed. U.S. producers Daikin and Chemours and Indian producer GFL state they use the international ASTM standard D 4894. Russian producer Halopolymer lists a mix of standards, which are internal company standards, the Russian State Standard, DSC, and ASTM D 4894, as depicted in table I-7. For example, one product by Halopolymer, product GP-100 (labeled as Commission product 3), lists three different standards for various properties: an internal company standard to measure particle size, ASTM D 4894 to measure the bulk density,

[78] Conference transcript, p. 12 (Cagle), p. 17 (Smith). It takes millions of dollars and up to a year to turn a granular reactor into an emulsion or dispersion reactor that make aqueous dispersion or fine powder. Petition, Exhibit 11, p. 6; Conference transcript, p. 12 (Cagle).

[79] Conference transcript, p. 33 (Cagle). Daikin's granular operations take place in a different building than other PTFE forms, and the granular product has a dedicated cleanroom for packaging. Granular PTFE production has different training and certification for employees compared to PTFE dispersion products. Petition, Exhibit 11, p. 5.

[80] Also referred to as filling or blending.

[81] A plant to produce granular PTFE resin requires significant capital investment of around $50 million to $100 million, whereas a compounder would need much less. A compounder could spend less than $1 million to set up a facility. Conference transcript, pp. 38-39 (Rubin).

[82] ASTM International, D 4894, Standard Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials, Petitioner's prehearing brief, Exhibit 5.

and differential scanning calorimetry to measure the melting point. In its technical data sheet for GP-100, Halopolymer states that it is an "ASTM Type II" product.[83] Based on the data provided, staff agrees with the classification. An ASTM Type II product is classified as a fine cut (low flow) product.[84]

[83] Halopolymer submitted documentation on GP-100 technical standards. ***. Respondent's posthearing brief, Exhibit B. In Halopolymer's ***. Respondents' posthearing brief, exhibit A.

[84] Halopolymer states ***. Hearing transcript, p. 220 (Newbury); Respondents' posthearing brief, exhibits A and B.

Table I-7:
Granular PTFE: Standards and types of products for Daikin, Chemours, and Halopolymer

Company	Product	Testing method	ASTM classification type reported by company in technical data sheets	Staff chemist ASTM type classification	Type of granular PTFE as designated by the ASTM standard	ITC pricing product number
Daikin	M-17	ASTM D 4894	Type II	Type II	Fine cut	1
Chemours	7A X	ASTM D 4894	Type II	Type II	Fine cut	1
Chemours	8A X	ASTM D 4894	Type IV	Type IV	Free flowing	2
Chemours	807N X	ASTM D 4894	Type IV	Type IV	Free flowing	2
Halopolymer	F4 PN40	DSC and ASTM D 4894	Type II	Type II	Fine cut	1
Halopolymer	F4 PN25	Internal company methods and ASTM D 4894	Type II	Type II	Fine cut	1
Halopolymer	F4 TM	DSC and ASTM D 4894	Type II	Type II	Fine cut	1
Halopolymer	F4 A1	Internal company methods and ASTM D 4894	Type IV	Type IV	Free flowing	2
Halopolymer	F4 A2	Internal company methods and ASTM D 4894	Type IV	Type IV	Free flowing	2
Halopolymer	GP-100	Internal company methods, DSC, and ASTM D 4894	Type II	Type II	Fine cut	3
Halopolymer	F4 RB	Russian State Standard for all except melting point, which is ASTM D 4894	Type I	Type I or Type IV	General purpose or free flowing	3
Halopolymer	F4 PN	Russian State Standard for all except melting point, which is ASTM D 4894	Type I	Type IV	Free flowing	3

Source: Technical Data Sheets, Respondents' prehearing brief, Exhibit 4; Petitioner's prehearing brief, exhibits 4 and 5.

Note: The testing methods are stated for only the properties of particle size, bulk density, water content, melting peak temperature, maximum thermal stability index, specific gravity, minimum tensile strength, and minimum percent elongation at break. DSC is differential scanning calorimetry. Finely divided, fine cut and low flow are the same terms. Information in the ASTM D 4894 specification is technically equivalent to related information in ISO 12086-1 and ISO 12086-2. Granular type of PTFE as designated by the ASTM standard references the previous column classification. ASTM Type I, in terms of particle

size and bulk density, would fall under the Commission's pricing product number 2, which is a free-flowing product. ***. Petitioner's posthearing brief, exhibit 4.

Domestic like product issues

The petitioner proposed a single domestic like product, coextensive with Commerce's scope. Although respondent GFL did not dispute petitioner's proposed domestic like product definition for purposes of the preliminary determinations, it suggested that the Commission should consider in any final phase of the investigations defining the domestic like product more broadly to encompass two other forms of PTFE (fine powder PTFE resin and dispersion PTFE resin) that are excluded from the scope definition.[85] Parties wishing to pursue domestic like product arguments in the final phase of these investigations were asked to provide suggested definitions with specificity for data collection in their comments on draft questionnaires.[86] No party requested data collection for a like product analysis in their comments on draft final phase questionnaires.[87]

[85] GFL's postconference brief, February 22, 2021, pp. 1-3, 8-9, and 12.

[86] Granular Polytetrafluoroethylene Resin from India and Russia, Inv. Nos. 701-TA-663-664 and 731-TA-1555-1556 (Preliminary) USITC Pub. 5174, March 2021, p. 11, fn. 49.

[87] ***.

Part II: Conditions of competition in the U.S. market

U.S. market characteristics

Granular PTFE is a polymer with a high melting point and melt viscosity, that is pressed or cut into seals, bearings, gaskets, bushings, corrosion-resistant linings, lab equipment, piping components, piston rings, and diaphragms. It is generally easier to produce and process relative to other versions of PTFE, excluding a less common specialty granular PTFE for semiconductors that requires more specification and has one of the highest prices for a PTFE product.[1]

Apparent U.S. consumption of granular PTFE decreased during 2018-20. Overall, apparent U.S. consumption in 2020 was *** percent lower than in 2018. However, apparent U.S. consumption was *** percent higher from January to June 2021 than the same period in 2020.

U.S. purchasers

The Commission received 18 usable questionnaire responses from firms that had purchased granular PTFE since January 1, 2018.[2] [3] [4] Ten of the responding purchasers are end users, 3 are compounders, 3 are manufacturers, 2 are distributors, 1 is a molder, and 1 is a converter.[5] Responding U.S. purchasers were located in the Midwest (6), Northeast (5), Central Southwest (5), and the Southeast (2). The largest responding purchasers of granular PTFE in descending order of size include ***.

[1] Petitioner postconference brief p. 12.

[2] The following firms provided purchaser questionnaire responses: ***.

[3] Of the 18 responding purchasers, 13 purchased the domestic granular PTFE, 9 purchased imports of the subject merchandise from India, 5 purchased imports of granular PTFE from Russia, and 6 purchased imports of granular PTFE from other sources.

[4] Fourteen purchasers indicated they had marketing/pricing knowledge of domestic product, 11 of India product, 9 of Russia product, and 10 of nonsubject countries.

[5] The molder *** produces PTFE blocks for rods, and the converter *** uses PTFE resin in electronics and industrial tapes.

Channels of distribution

Table II-1 presents U.S. producers', U.S. compounders'[6], and U.S. importers' channels of distribution. U.S. producers and importers sold predominately to end users, while U.S. compounders sold only to end users.

Table II-1
Granular PTFE: Share of U.S. producers' and importers' U.S. shipments by channel of distribution within source, by period

Shares in percent

Source	Channel	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. producers	Distributors	***	***	***	***	***
U.S. producers	Fillers/compounders	***	***	***	***	***
U.S. producers	End users	***	***	***	***	***
U.S. compounders	Distributors	***	***	***	***	***
U.S. compounders	Fillers/compounders	***	***	***	***	***
U.S. compounders	End users	***	***	***	***	***
India	Distributors	***	***	***	***	***
India	Fillers/compounders	***	***	***	***	***
India	End users	***	***	***	***	***
Russia	Distributors	***	***	***	***	***
Russia	Fillers/compounders	***	***	***	***	***
Russia	End users	***	***	***	***	***
Subject sources	Distributors	***	***	***	***	***
Subject sources	Fillers/compounders	***	***	***	***	***
Subject sources	End users	***	***	***	***	***
Nonsubject sources	Distributors	***	***	***	***	***
Nonsubject sources	Fillers/compounders	***	***	***	***	***
Nonsubject sources	End users	***	***	***	***	***
All imports	Distributors	***	***	***	***	***
All imports	Fillers/compounders	***	***	***	***	***
All imports	End users	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[6] Compounders generally purchase granular PTFE resin to produce 'filled' PTFE resin as described in Part I and III. "U.S. producers" refers to the two integrated producers, Daikin and Chemours.

Geographic distribution

U.S. producers reported selling granular PTFE to all U.S. regions (table II-2). Importers reported selling to all regions except for those outside of the contiguous United States, although no importer of Russian product reported sales to the Mountains region. For U.S. producers, no sales were within 100 miles of their production facility, 75 percent were between 101 and 1,000 miles, and 25 percent were over 1,000 miles. Importers sold 20 percent within 100 miles of their U.S. point of shipment, 60 percent between 101 and 1,000 miles, and 20 percent over 1,000 miles.

Table II-2
Granular PTFE: Count of U.S. producers' and U.S. importers' geographic markets, by source and by region

Count in number of firms reporting

Region	U.S. producers	India	Russia	Subject sources
Northeast	***	3	3	5
Midwest	***	3	2	4
Southeast	***	1	1	2
Central Southwest	***	3	3	5
Mountains	***	1	0	1
Pacific Coast	***	2	2	4
Other	***	0	0	0
All regions (except Other)	***	1	0	1
Reporting firms	2	3	3	5

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding granular PTFE from U.S. producers and from subject countries. Reported capacity in subject countries was *** as large as U.S. producers' capacity during 2018-20. The U.S. industry's capacity utilization rate was similar to that of subject countries in 2018 but fell to almost half that of subject countries in 2020 (*** percent compared to *** percent for subject countries). Subject country ending inventories for the two countries combined were similar to U.S. producers' inventories in 2018 and 2020 ***. U.S. produced granular PTFE predominately shipped domestically at *** percent while most shipments from India and Russia were to export markets.

Table II-3
Granular PTFE: Supply factors that affect the ability to increase shipments to the U.S. market, by factor and by country

Quantity in 1,000 pounds dry weight; ratio and share in percent; count is number of "yes" responses

Factor	Measure	United States	India	Russia	Subject suppliers
Capacity 2018	Quantity	***	***	***	***
Capacity 2020	Quantity	***	***	***	***
Capacity utilization 2018	Ratio	***	***	***	***
Capacity utilization 2020	Ratio	***	***	***	***
Ending inventories 2018	Ratio	***	***	***	***
Ending inventories 2020	Ratio	***	***	***	***
Home market 2020	Ratio	***	***	***	***
Non-US export markets 2020	Ratio	***	***	***	***
Ability to shift production	Count	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Responding U.S. producers accounted for all of U.S. production of granular PTFE in 2020. Responding foreign producer/exporter firms accounted for all of U.S. imports of granular PTFE from subject countries during 2020. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

Domestic production

Based on available information, U.S. producers of granular PTFE have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of U.S.-produced granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, some availability of inventories and some ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited ability to shift production to or from alternate products and supply constraints.

U.S. producers' capacity increased from 2018 to 2020, but production declined in 2020, which combined led to much lower capacity utilization in 2020. *** U.S. producers reported that they do not produce other products on the same equipment used to produce granular PTFE. *** U.S. producers reported exporting granular PTFE to a variety of markets including ***. Both U.S. producers as well as purchases reported some supply constraints during the period, as discussed later in the Supply Constraints section (p. II-8).

Subject imports from India

Based on available information, the responding producer of granular PTFE from India, GFL, has the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply are high overall capacity, reduced capacity utilization from 2018 to 2020, the availability of unused inventories, and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited ability to shift production to or from alternate products.

India's granular PTFE production capacity was *** from 2018 to 2020, while capacity utilization went down from *** percent during the same period. The plurality of Indian granular PTFE shipments were to *** percent in 2020.[7] India's granular PTFE inventory ratios to total shipments were ***. ***.[8]

[7] ***.

[8] ***.

Subject imports from Russia

Based on available information, the responding producer of granular PTFE from Russia, HaloPolymer, has the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of granular PTFE to the U.S. market. The main contributing factors to this degree of responsiveness of supply include the large overall capacity, the availability of unused capacity, and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply include limited availability of inventories and limited ability to shift production to or from alternate products.

Russia's granular PTFE production capacity *** dry pounds, respectively, and capacity utilization was *** percent during the same period, respectively. ***. ***. ***. ***.

Imports from nonsubject sources

Nonsubject imports accounted for 40.7 percent of total U.S. imports in 2020, by value. The largest sources of nonsubject imports during January 2018-June 2021 were China and the Netherlands.

Supply constraints

*** U.S. producers and none of the eight responding importers reported that they had experienced supply constraints from January 1, 2018, to the petition filing on January 27, 2021. *** U.S. producers and 6 of 8 responding U.S. importers indicated they had experienced supply constraints since the petition was filed. ***. ***. ***."

*** reported several instances as a customer of *** in which supply became scarce, prices were increased up to 250 percent in an instance, the range of products offered decreased, and issues fulfilling 50 percent of orders due to the petition throughout 2021. U.S. importers *** also noted supply disruptions due to COVID-19 since 2021.

Seven of 18 responding purchasers reported that they had experienced supply constraints from January 1, 2018 to January 27, 2021 and 11 of 18 reported supply constraints since the petition was filed. Prior to the petition being filed, *** reported that Chemours and Daikin had issues fulfilling orders due to limited production capacity, *** reported that importer and compounder 3M/Dyneon was unable to fulfill orders in an isolated incident in 2018, *** reported issues with both domestic and Indian supplies, and *** reported a disruption to U.S. supply due to plant issues relating to storm Uri. Since the petition was filed, *** reported that domestic producers have been unable to fulfill their demand for the product. Purchaser *** reported no issues receiving Russian product, purchasers Palmer Holland and Freudenberg reported tight global supply, and purchaser Prolon reported that the pandemic was the primary issue disrupting both domestic and imported supply.

New suppliers

No purchaser indicated that new suppliers entered the U.S. market since January 1, 2018.

U.S. demand

Based on available information, the overall demand for granular PTFE is likely to experience small-to-moderate changes in response to changes in price. The main contributing factors are the somewhat limited range of substitute products and varying cost share of granular PTFE in most of its end-use products.

End uses and cost share

U.S. demand for granular PTFE depends on the demand for U.S.-produced downstream products. Reported end uses include seals, gaskets, bearings, films, tapes, molded parts, and PTFE micro-powder. U.S producers note that the demand for these downstream products generally increases or decreases with the U.S. economy. Firms reported widely varying cost shares of granular PTFE in end-use products, ranging from less than 10 percent to more than 90 percent. Some cost shares reported by purchasers include 65 percent in electronics, 20 to 45 percent in tapes, 45 to 90 percent in seals, 9 to 15 percent in pumps, 15 percent in spacers and washers, 12 percent in lined steel fittings, and 33 percent in lined steel pipe.

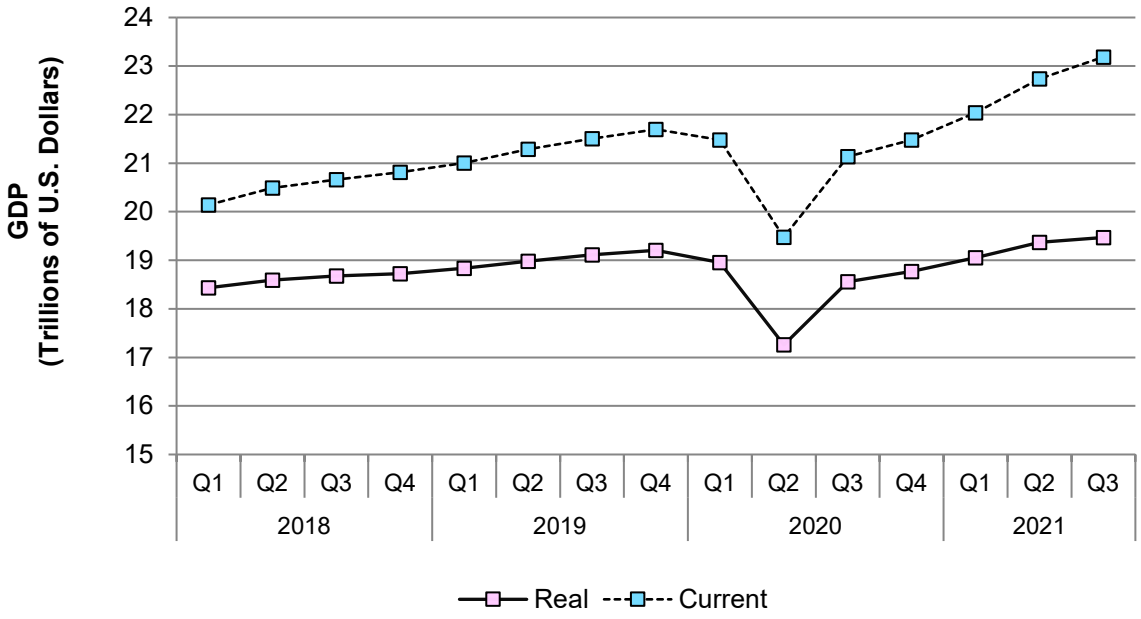
As shown in table II-4 and figure II-1, domestic GDP in current and "real" terms, increased 6.6 percent and 1.8 percent, respectively, between the first quarter of 2018 and the fourth quarter of 2020. However, GDP decreased sharply in the second quarter of 2020 in current and "real" terms before recovering in the third and fourth quarter of 2020, which continued into the third quarter of 2021.

Table II-4
GDP: Gross domestic product in the United States, current dollar and "real" (chained 2012 dollars), in trillions of U.S. dollars, seasonally adjusted, by quarter, January 2018-September 2021

Quarter	Real	Current
January 2018	18.4	20.1
April 2018	18.6	20.5
July 2018	18.7	20.7
October 2018	18.7	20.8
January 2019	18.8	21.0
April 2019	19.0	21.3
July 2019	19.1	21.5
October 2019	19.2	21.7
January 2020	19.0	21.5
April 2020	17.3	19.5
July 2020	18.6	21.1
October 2020	18.8	21.5
January 2021	19.1	22.0
April 2021	19.4	22.7
July 2021	19.5	23.2

Source: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org, retrieved December 1, 2021.

Figure II-1
GDP: Gross domestic product in the United States, current dollar and "real" (chained 2012 dollars), in trillions of U.S. dollars, seasonally adjusted, by quarter, January 2018-September 2021



Source: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org, retrieved December 1, 2021.

Business cycles

*** U.S. producers, all importers, and four of nine purchasers indicated that the market was subject to business cycles or conditions of competition. Specifically, firms reported that changes in the PTFE market are caused by fluctuations of the U.S. economy, and in particular, the semiconductor and automotive markets, as well as antidumping and section 301 tariff measures, import competition, supply chain issues, and government regulations. Importer *** reported that Daikin, or its subsidiaries, utilize Russian or Chinese PTFE. *** noted that the market is segmented by premium products served by U.S. producers Chemours and Daikin and less pure and reliable imported products like those from Russia. Purchaser *** noted PTFE resin sales are affected by capital spending, new construction cycles, and fluorspar availability. Purchaser *** noted that, since Daikin purchased Heroflon USA, the virgin PTFE and compound resin products it uses are no longer available in the United States.

Demand trends

Most firms reported an increase or fluctuation in U.S. demand for granular PTFE since January 1, 2018 (table II-5).

Table II-5
Granular PTFE: Count of firms' responses regarding overall domestic and foreign demand, by firm type and by market

Market	Firm type	Increase	No change	Decrease	Fluctuate
Domestic demand	U.S. producers	***	***	***	***
Domestic demand	Importers	5	0	1	4
Domestic demand	Purchasers	8	1	2	6
Foreign demand	U.S. producers	***	***	***	***
Foreign demand	Importers	5	0	1	4
Foreign demand	Purchasers	5	1	2	2
Demand for end use products	Purchasers	3	1	4	8

Source: Compiled from data submitted in response to Commission questionnaires.

Substitute products

Substitutes for granular PTFE are limited or nonexistent, depending on the end use. One of two responding U.S. producers, seven of nine importers, and thirteen of fifteen purchasers reported that there were no substitutes for granular PTFE. U.S. producer *** reported that PFA and FEP resins could be used as substitutes for granular PTFE in wire, cable and tubing products and silicone or polyethylene could be used as substitutes for granular PTFE in molding applications that do not require all PTFE properties. Importer *** reported that PEEK could be used as a substitute in seal or ring production. Purchasers *** noted PFA and fine powder PTFE were substitutes.

Substitutability issues

This section assesses the degree to which U.S.-produced granular PTFE and imports of granular PTFE from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of granular PTFE from domestic and imported sources based on those factors. Based on available data, staff believes that there is a moderate-to-high degree of substitutability between domestically produced granular PTFE and granular PTFE imported from subject sources.[9] Factors contributing to this level of substitutability include little preference for particular country of origin or producers, similarities between domestically produced granular PTFE and granular PTFE imported from subject countries across multiple purchase factors, and interchangeability between domestic and subject sources. Factors reducing substitutability include some reported product and quality differences and differences in product specification requirements.

[9] The degree of substitution between domestic and imported granular PTFE depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced granular PTFE to the granular PTFE imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as relative prices (discounts/rebates), quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

Purchaser decisions based on source

As shown in table II-6, most purchasers and their customers sometimes, or never, make purchasing decisions based on the producer or country of origin. Of the six purchasers that reported that they always or usually make decisions based on the manufacturer, firms cited quality, risk, price, availability, environmental, and regulatory requirements. *** reported that U.S. producers do not sell most of the grades it demands.

Table II-6
Granular PTFE: Purchasing decision based on producer and country of origin

Count in number of firms reporting

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	3	3	4	7
Customer	Producer	0	1	6	7
Purchaser	Country	2	1	4	8
Customer	Country	0	2	6	6

Source: Compiled from data submitted in response to Commission questionnaires.

Importance of purchasing domestic product

Sixteen of 18 purchasers reported that most or all of their purchases did not require purchasing U.S.-produced granular PTFE. One purchaser reported that domestic product was required by law (for 0.1 to 24.9 percent of their purchases), five reported it was required by their customers (for 0.1 to 100 percent of their purchases), and one reported other preferences for domestic product.

Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for granular PTFE were availability/supply (13 firms), quality (12 firms), price/cost (11 firms), and specification requirements (6 firms), as shown in table II-7. Specification requirements was the most frequently cited first-most important factor (cited by 6 firms), followed by quality (5 firms); price/cost and quality were the most frequently reported second-most important factors (5 firms each); and price/cost and availability/supply were the most frequently reported third-most important factors (5 firms each).

Table II-7
Granular PTFE: Purchasing decisions as reported by U.S. purchasers, by factor

Count in number of firms reporting

Factor	First	Second	Third	Total
Availability / Supply	4	4	5	13
Quality	5	5	2	12
Price / Cost	1	5	5	11
Specification Requirements	6	0	0	6
All other factors	5	2	4	NA

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Other factors include cleanliness, consistency, diversity of products, and technical.

Half of purchasers (8 of 16) reported that they sometimes purchase the lowest-priced product, followed by five usually responses, four never, and one firm, ***, indicated they always purchase the lowest-priced product.[10]

Importance of specified purchase factors

Purchasers were asked to rate the importance of 16 factors in their purchasing decisions (table II-8). The factors rated as very important by more than half of responding purchasers were availability and product consistency (16 each); quality meets industry standards and reliability of supply (15 each); customer specifications (14); delivery time (13); quality exceeds industry standards (10); and delivery time, price, and technical support/service (9 each).

[10] *** indicated both “sometimes” and “never.”

Table II-8
Granular PTFE: Count of importance of purchase factors, as reported by U.S. purchasers, by factor

Count in number of firms reporting

Factor	Very important	Somewhat important	Not important
Availability	16	0	1
Customer specifications	14	0	3
Delivery terms	9	5	3
Delivery time	13	3	1
Discounts offered	5	6	6
Minimum quantity requirements	4	6	7
Packaging	3	9	5
Payment terms	6	6	5
Price	9	5	2
Product consistency	16	0	1
Product range	5	7	5
Quality meets industry standards	15	1	1
Quality exceeds industry standards	10	5	2
Reliability of supply	15	2	0
Technical support/service	9	4	3
U.S. transportation costs	3	9	4

Source: Compiled from data submitted in response to Commission questionnaires.

Lead times

Granular PTFE is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments came from inventories, with lead times averaging *** days. The remaining *** percent U.S. producers' commercial shipments were produced-to-order, with lead times averaging *** days. Importers reported that *** percent of their commercial shipments came from inventories, with lead times averaging *** days and that *** percent of commercial shipments came from foreign inventories, with lead times averaging *** days.

Supplier certification

Twelve of 17 responding purchasers require their suppliers to become certified or qualified to sell granular PTFE to their firm. Purchasers reported that the time to qualify a new supplier ranged from 30 to 180 days. *** noted certification requiring technical assessment, quality assessment, and the assessment of supplier qualifications, *** noted requiring samples for certification, while *** noted supplier needs to meet dimensional and quality requirements following ASTM 1545 testing requirements.[11]

Two of 17 purchasers reported that a domestic or foreign supplier had failed in its attempt to qualify granular PTFE or had lost its approved status since 2018. *** reported that an unidentified supplier was unable to provide suitable quality resin within its required timeframe, and *** noted that U.S. producer *** billets cracked during curing and *** product failed a lifecycle test.

Minimum quality specifications

As can be seen from table II-9, most responding purchasers (14 of 17) reported that domestically produced product always or usually met minimum quality specifications. Three responding purchasers reported that the Indian granular PTFE always met minimum quality specifications and 6 reported that it usually did. Four responding purchasers reported that the Russian granular PTFE always met minimum quality specifications.

Table II-9
Granular PTFE: Count of firms' responses regarding suppliers' ability to meet minimum quality specifications, by source

Count in number of firms reporting

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't know
United States	8	6	0	0	3
India	3	6	3	1	4
Russia	4	1	3	1	8
All other sources	5	5	2	0	1

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Purchasers were asked how often domestically produced or imported granular PTFE meets minimum quality specifications for their own or their customers' uses.

Seventeen of 18 responding purchasers reported factors that determined quality characteristics included purity, consistency, meeting customer specification requirements, and performance.

[11] American Society for Testing and Materials (ASTM)

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2018 (table II-10). *** noted availability was the reason they purchased granular PTFE from subject countries. *** reported that they added Heroflon USA (Daikin's sister company). *** listed several Chinese firms it no longer purchases from due to trade disputes and corresponding tariffs. Four of 17 responding purchasers reported that they had changed suppliers since January 1, 2018.

Table II-10
Granular PTFE: Count of changes in purchase patterns from U.S., subject, and nonsubject countries

Count in number of firms reporting

Source of purchases	Decreased	Increased	Constant	Fluctuated	Did not purchase
United States	3	1	3	8	2
India	1	2	2	1	9
Russia	1	4	2	2	7
All other sources	3	1	0	4	3
Sources unknown	0	0	1	2	8

Source: Compiled from data submitted in response to Commission questionnaires.

Purchase factor comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked several questions comparing granular PTFE produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 16 factors (tables II-11) for which they were asked to rate the importance.

Most purchasers reported that U.S.-produced granular PTFE was comparable to Indian granular PTFE on most factors except for availability and price, which the U.S. product was rated inferior by most purchasers. U.S. granular PTFE was considered less comparable with Russian granular PTFE on several factors: the price for U.S. produced granular PTFE was considered by a majority to be inferior, most purchasers considered U.S. granular PTFE comparable or inferior on delivery related factors, and U.S. product was considered comparable or superior to Russian product in most consistency and quality factors. The vast majority of purchasers reported that availability and product consistency were very important factors in purchase decisions (see table II-8).

Table II-11
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs India	2	3	5
Customer specifications	U.S. vs India	3	7	1
Delivery terms	U.S. vs India	2	5	3
Delivery time	U.S. vs India	3	3	3
Discounts offered	U.S. vs India	0	7	3
Minimum quantity requirements	U.S. vs India	1	8	0
Packaging	U.S. vs India	1	8	0
Payment terms	U.S. vs India	2	6	2
Price	U.S. vs India	1	1	8
Product consistency	U.S. vs India	3	7	1
Product range	U.S. vs India	3	7	1
Quality meets industry standards	U.S. vs India	2	9	0
Quality exceeds industry standards	U.S. vs India	3	8	0
Reliability of supply	U.S. vs India	2	7	1
Technical support/service	U.S. vs India	2	7	1
U.S. transportation costs	U.S. vs India	1	7	1

Table continued on next page.

Table II-11 continued
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs Russia	1	3	3
Customer specifications	U.S. vs Russia	3	5	0
Delivery terms	U.S. vs Russia	1	3	3
Delivery time	U.S. vs Russia	2	1	3
Discounts offered	U.S. vs Russia	0	5	2
Minimum quantity requirements	U.S. vs Russia	1	5	0
Packaging	U.S. vs Russia	1	5	0
Payment terms	U.S. vs Russia	1	3	3
Price	U.S. vs Russia	1	1	6
Product consistency	U.S. vs Russia	4	4	0
Product range	U.S. vs Russia	3	4	1
Quality meets industry standards	U.S. vs Russia	3	5	0
Quality exceeds industry standards	U.S. vs Russia	4	4	0
Reliability of supply	U.S. vs Russia	3	3	1
Technical support/service	U.S. vs Russia	3	4	0
U.S. transportation costs	U.S. vs Russia	1	5	1

Table continued.

Table II-11 continued
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	India vs Russia	1	6	1
Customer specifications	India vs Russia	1	7	0
Delivery terms	India vs Russia	1	5	2
Delivery time	India vs Russia	1	5	1
Discounts offered	India vs Russia	0	7	0
Minimum quantity requirements	India vs Russia	0	7	0
Packaging	India vs Russia	0	6	1
Payment terms	India vs Russia	0	8	0
Price	India vs Russia	0	7	1
Product consistency	India vs Russia	0	7	1
Product range	India vs Russia	0	8	0
Quality meets industry standards	India vs Russia	0	8	0
Quality exceeds industry standards	India vs Russia	0	8	0
Reliability of supply	India vs Russia	1	7	0
Technical support/service	India vs Russia	0	7	1
U.S. transportation costs	India vs Russia	0	8	0

Table continued on next page.

Table II-11 continued
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. vs Nonsubject	2	0	4
Customer specifications	U.S. vs Nonsubject	1	6	0
Delivery terms	U.S. vs Nonsubject	3	3	0
Delivery time	U.S. vs Nonsubject	3	1	2
Discounts offered	U.S. vs Nonsubject	0	5	1
Minimum quantity requirements	U.S. vs Nonsubject	1	4	1
Packaging	U.S. vs Nonsubject	1	4	0
Payment terms	U.S. vs Nonsubject	1	4	0
Price	U.S. vs Nonsubject	0	1	3
Product consistency	U.S. vs Nonsubject	1	5	0
Product range	U.S. vs Nonsubject	1	4	1
Quality meets industry standards	U.S. vs Nonsubject	1	5	0
Quality exceeds industry standards	U.S. vs Nonsubject	1	5	0
Reliability of supply	U.S. vs Nonsubject	1	3	1
Technical support/service	U.S. vs Nonsubject	1	4	0
U.S. transportation costs	U.S. vs Nonsubject	2	2	0

Table continued.

Table II-11 continued
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	India vs Nonsubject	0	5	1
Customer specifications	India vs Nonsubject	0	5	1
Delivery terms	India vs Nonsubject	1	5	0
Delivery time	India vs Nonsubject	0	5	1
Discounts offered	India vs Nonsubject	1	5	0
Minimum quantity requirements	India vs Nonsubject	0	6	0
Packaging	India vs Nonsubject	0	6	0
Payment terms	India vs Nonsubject	0	6	0
Price	India vs Nonsubject	1	3	0
Product consistency	India vs Nonsubject	0	4	1
Product range	India vs Nonsubject	0	6	0
Quality meets industry standards	India vs Nonsubject	0	6	0
Quality exceeds industry standards	India vs Nonsubject	0	5	1
Reliability of supply	India vs Nonsubject	0	4	1
Technical support/service	India vs Nonsubject	0	5	0
U.S. transportation costs	India vs Nonsubject	0	4	0

Table continued on next page.

Table II-11 continued
Granular PTFE: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and by country pair

Count in number of firms reporting

Factor	Country pair	Superior	Comparable	Inferior
Availability	Russia vs Nonsubject	1	3	0
Customer specifications	Russia vs Nonsubject	0	3	1
Delivery terms	Russia vs Nonsubject	0	4	0
Delivery time	Russia vs Nonsubject	1	3	0
Discounts offered	Russia vs Nonsubject	1	3	0
Minimum quantity requirements	Russia vs Nonsubject	0	4	0
Packaging	Russia vs Nonsubject	0	3	1
Payment terms	Russia vs Nonsubject	0	4	0
Price	Russia vs Nonsubject	1	3	0
Product consistency	Russia vs Nonsubject	0	3	1
Product range	Russia vs Nonsubject	0	4	0
Quality meets industry standards	Russia vs Nonsubject	0	3	0
Quality exceeds industry standards	Russia vs Nonsubject	0	3	1
Reliability of supply	Russia vs Nonsubject	1	2	0
Technical support/service	Russia vs Nonsubject	0	3	0
U.S. transportation costs	Russia vs Nonsubject	1	2	0

Source: Compiled from data submitted in response to Commission questionnaires.

Comparison of U.S.-produced and imported Granular PTFE

In order to determine whether U.S.-produced granular PTFE can generally be used in the same applications as imports from India and Russia, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-12 to II-14, all producers indicated U.S. and imported granular PTFE is frequently interchangeable, most importers reported that U.S. and imported granular PTFE was frequently or sometimes interchangeable, and most purchasers reported that U.S. and imported granular PTFE was frequently or sometimes interchangeable. U.S. and Indian product are noted to be frequently interchangeable by U.S. producers and frequently or sometimes by most U.S. importers and purchasers. U.S. and Russian granular PTFE were reported to be frequently interchangeable by U.S. producers, sometimes or never interchangeable by most U.S. importers, and purchasers reported mixed responses with a slight plurality reporting them to be frequently interchangeable. Purchaser *** noted impurity issues with Indian and domestically produced granular PTFE, but not with Russian granular PTFE.

Table II-12
Granular PTFE: Count of U.S. producers reporting the interchangeability between granular PTFE produced in the United States and in other countries, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	***	***	***	***
United States vs. Russia	***	***	***	***
India vs. Russia	***	***	***	***
United States vs. Other	***	***	***	***
India vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table II-13
Granular PTFE: Interchangeability between PTFE in the United States and in other countries reported by U.S. importers, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	1	4	4	1
United States vs. Russia	0	2	4	3
India vs. Russia	0	3	5	0
United States vs. Other	1	3	6	0
India vs. Other	0	3	5	0
Russia vs. Other	1	2	5	0

Source: Compiled from data submitted in response to Commission questionnaires.

Table II-14
Granular PTFE: Interchangeability between PTFE in the United States and in other countries reported by U.S. purchasers, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	2	4	4	1
United States vs. Russia	2	3	2	2
India vs. Russia	3	3	2	0
United States vs. Other	2	4	3	1
India vs. Other	1	3	4	0
Russia vs. Other	2	3	1	0

Source: Compiled from data submitted in response to Commission questionnaires.

Several purchasers described some differences in interchangeability between U.S. and imported product. *** reported that subject importers supply commodity grades which are not interchangeable with the specialty grades sold by U.S. producers, and that product from India and Russia require additional processing to be used in some lower-end applications and cannot be used in the specialty applications where U.S. product is frequently used. Purchaser *** noted Indian and Russian product are too infrequently usable for their required specification to be purchased by them. Conversely, purchaser *** reported that it has not had issues interchanging products unless the customer specifies it does not want product from a particular country. *** noted most products are always interchangeable, but there are a few specifications and niche applications that are less interchangeable.

Respondents stated that tensile strength, elongation, and particle size are primary differences between domestic and subject PTFE resin.[12] Petitioners noted that while Daikin offers a general-purpose industrial grade granular PTFE resin, Chemours offers a wide range of characteristics including tensile strength.[13]

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of granular PTFE from the United States, subject, or nonsubject countries. As seen in tables II-15 to II-17, both U.S. producers indicated that U.S. and other countries granular PTFE sometimes had differences other than price, most importers indicated there were sometimes differences, and most purchasers indicated there were always or frequently differences. The differences other than price listed by purchasers included consistency, cleanliness, technical, availability, diversity of products and specification requirements. *** noted it's unaware of a domestically produced granular PTFE having a comparatively large particle size that meet the specifications of what it uses. Purchaser *** indicated domestic producers do not produce the grades it requires. Importer *** stated that the U.S. producers like Daikin frequently cannot support requirements with their existing capacity and with products that meet its standards. *** reported that differences between U.S. product and subject imports include only commodity grades available, lower quality, varying availability, more complex transportation networks, and differences in technical support and customer service.

[12] Respondent's prehearing brief, pp. 5-10

[13] U.S. producers' posthearing brief, p. 4

Table II-15
Granular PTFE: Perceived importance of factors other than price between product produced in the United States in other countries reported by U.S. producers, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	***	***	***	***
United States vs. Russia	***	***	***	***
India vs. Russia	***	***	***	***
United States vs. Other	***	***	***	***
India vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table II-16
Granular PTFE: Perceived importance of factors other than price between product produced in the United States in other countries reported by U.S. importers, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	1	1	7	0
United States vs. Russia	2	2	3	0
India vs. Russia	0	1	6	0
United States vs. Other	0	1	8	0
India vs. Other	0	1	6	0
Russia vs. Other	0	1	5	0

Source: Compiled from data submitted in response to Commission questionnaires.

Table II-17
Granular PTFE: Perceived importance of factors other than price between product produced in the United States in other countries reported by U.S. purchasers, by country pair

Count in number of firms reporting

Country pair	Always	Frequently	Sometimes	Never
United States vs. India	7	2	2	1
United States vs. Russia	5	2	1	1
Russia vs. India	2	0	4	2
United States vs. Other	3	2	5	0
India vs. Other	2	3	4	0
Russia vs. Other	3	1	2	0

Source: Compiled from data submitted in response to Commission questionnaires.

Elasticity estimates

This section discusses elasticity estimates. Parties did not comment on these estimates in their prehearing or posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity for granular PTFE measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of granular PTFE. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced granular PTFE. Analysis of these factors above indicates that the U.S. industry has the moderate to high ability to increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 8 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for granular PTFE measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of granular PTFE. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the granular PTFE in the production of any downstream products. Based on the available information, the aggregate demand for granular PTFE is likely to be inelastic; a range of -0.6 to -0.9 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[14] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced granular PTFE and imported granular PTFE is likely to be in the range of 3 to 5.

[14] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

Part III: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of six U.S. producers that accounted for all known U.S. production of granular PTFE during 2020.

U.S. producers

U.S. producers as presented in this chapter include both integrated producers and compounders. Integrated producers are firms that chemically manufacture granular PTFE resin from raw materials. An integrated producer may also further manufacture or process its own granular PTFE resin production by filling, modifying, or compounding prior to commercial sale or internal use. Compounders are firms that purchase granular PTFE resin, whether domestic, purchased, or imported, and mix it with another substance in the United States, then sell this compounded granular PTFE resin in the commercial market.

The Commission issued a U.S. producer questionnaire to ten firms based on information contained in the petitions and collected during the preliminary phase of the investigations. Six firms – two integrated producers and four compounders – provided usable data on their operations. Staff believes that these responses represent all known U.S. production of granular PTFE.[1] [2]

[1] Daikin and Chemours are the only known integrated producers in the United States. Petitions, p. I-3, and domestic interested producers' prehearing brief, p. 4. The four compounders that submitted a U.S. producer questionnaire response – 3M Company ("3M"), AGC Chemicals Americas Inc. ("AGC"), Flontech USA ("Flontech"), and GFL Americas, LLC ("GFL Americas") – are the only known firms that are compounders, as defined in questionnaires and the staff report. While there are other firms that domestically compound granular PTFE resin that they import or purchase, they are only internally consuming the compounded granular PTFE resin to produce a downstream product, and thus, are not compounders, as defined above.

[2] ***. Email from ***, November 22, 2021.

Table III-1 lists U.S. producers of granular PTFE, their production locations, positions on the petition, and shares of total production.

Table III-1
Granular PTFE: U.S. producers of granular PTFE, their positions on the petition, production locations, and shares of reported production, 2020

Shares in percent

Firm	Position on petition	Production location(s)	Share of integrated production	Share of compounders production
3M	***	Aston, PA	***	***
AGC	***	Downingtown, PA	***	***
Chemours	***	Washington, WV	***	***
Daikin	***	Decatur, AL	***	***
Flontech	***	Pittston, PA	***	***
GFL Americas	***	Rockdale, Texas	***	***
All firms	Various	Various	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: As further detailed in table III-3, ***.

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms.

Table III-2
Granular PTFE: U.S. producers' ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

As indicated in table III-2, one U.S. producer (***) is related to a foreign producer of the subject merchandise and two U.S. producers (***) are related to U.S. importers of the subject merchandise.[3] In addition, as discussed in greater detail below, three U.S. producers (***) directly import the subject merchandise and two U.S. producers (***) purchase the subject merchandise from U.S. importers.

[3] ***. *** importer questionnaire at II-2a.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2018.[4] Beginning in 2018, Daikin expanded its granular PTFE capacity by 50 percent at its Decatur, Alabama facilities.[5] The expansion, ***, converted equipment, *** to make granular PTFE.[6] The firm based this business decision on the affirmative preliminary determinations in the prior investigations of PTFE resin from China and India ***.[7] Daikin also reported that, for six months between January 2019 and September 2020, its plant was idled for three out of four weeks due to loss of market share to subject imports.[8] Chemours reported ***. In 2019, Chemours also reported ***.[9]

[4] U.S. compounders were only asked to complete select parts of the U.S. producer questionnaire, which did not include the question on changes in operations. As such, only integrated producers provided data on changes in operations.

[5] Hearing transcript, pp. 32-33 (Segars), 127 (Rubin).

[6] Conference transcript, pp. 21, 24 (Rubin); staff correspondence with ***, February 12, 2021.

[7] Conference transcript, pp. 21, 24 (Rubin); and staff correspondence with ***, February 12, 2021.

[8] Hearing transcript, pp. 26-27 (Cagle), p. 52 (Meisner).

[9] Staff correspondence with ***, February 16, 2021.

Table III-3
Granular PTFE: U.S. producers' reported changes in operations, since January 1, 2018

Item	Firm name and accompanying narrative response
Expansions	***
Prolonged shutdowns or curtailments	***
Prolonged shutdowns or curtailments	***
Other	***

Source: Compiled from data submitted in response to Commission questionnaires.

Sufficient production-related activities

These investigations raise the domestic industry issue of whether certain processors of granular PTFE resin, commonly known as "compounders" or "fillers," engage in sufficient production-related activities to be considered producers of the domestic like product.

U.S. producers were asked to rate the complexity, intensity, and importance of its production and/or compounding activities, with a rating of "1" being minimally complex, intense, or important, and a rating of "5" being extremely complex, intense, and important. As presented in table III-4, all firms rated the complexity of their production and/or compounding operations at a 3 or higher.

Table III-4
Granular PTFE: U.S. producers' rating of their production and compounding operations, by firm

Count in number of firms reporting

Firm	Rating of 1	Rating of 2	Rating of 3	Rating of 4	Rating of 5
3M	***	***	***	***	***
AGC	***	***	***	***	***
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All producers	---	---	1	2	3

Source: Compiled from data submitted in response to Commission questionnaires.

Note: The rating by responding U.S. producers as to the complexity, intensity, and importance of their production and/or compounding operations conducted in the United States is on a scale of 1 to 5, with 1 being minimally complex, intense, or important to 5 being extremely complex, intense, and important.

U.S. producers were asked to provide information on the six factors relevant to the sufficient production-related activities analysis that the Commission routinely undertakes. Table III-5 provides information on firms' domestic production-related activities.[10]

Table III-5
Granular PTFE: U.S. producers' data for sufficient production related activities by firm and SPRA factors, since January 1, 2018

Firm	Capital investments (Value in 1,000 dollars)	Technical expertise (Value in 1,000 dollars)	Value added (percent)	Employment (number of production related workers)	Quantity, type, and source of parts (Value in 1,000 dollars)
3M	***	***	***	***	***
AGC	***	***	***	***	***
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Capital investments are the range of annual capital expenditures reported from 2018-2020. Technical expertise is the range of aggregate annual research and development expenses reported from 2018-2020. Value added data are the range of aggregate annual total conversion costs divided by total COGS percentages reported from 2018-2020. Employment data are aggregate annual production and related workers (PRWs) range from 2018-2020. Quantity, type, and source of parts data are the aggregate annual domestic raw materials costs for 2018-2020. See appendix D for more detail regarding sufficient production related activities. ***.

[10] Further information on firms' domestic production activities is presented in appendix D.

U.S. production, capacity, and capacity utilization

Table III-6 and figure III-1 present U.S. integrated producers' production, capacity, and capacity utilization. Integrated producers' capacity increased by *** percent between 2018 and 2020 and was *** in interim 2021 compared to interim 2020.[11] Integrated producers' granular PTFE production decreased by *** percent during 2018-20, but was *** percent higher in interim 2021 than in interim 2020. Daikin *** attributed the decreased production levels during the period of investigation to an erosion of market share due to subject imports that was exacerbated by decreased demand due to the COVID-19 pandemic.[12] Increased capacity coupled with decreased production resulted in capacity utilization decreasing by *** percentage points from 2018 to 2020, but was *** percentage points higher in interim 2021 than in interim 2020, as capacity was *** while production was higher in interim 2021 than in interim 2020.

[11] Daikin's capacity increased due to the aforementioned capacity expansion that began in 2018, which involved converting equipment to make granular PTFE. ***. *** producer questionnaire at II-2a.

[12] Conference transcript, pp. 27 (Segars), 69 (Rubin); and staff correspondence with ***, February 16, 2021. See also *** producer questionnaire at II-2a: "*** and II-2b: "***." See *** producer questionnaire at II-2a: "***" and II-2b:"***."

Table III-6
Granular PTFE: U.S. integrated producers' capacity, by firm and period

Capacity in 1,000 pounds dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table III-6 Continued
Granular PTFE: U.S. integrated producers' production, by firm and period

Production in 1,000 pounds dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table III-6 Continued
Granular PTFE resin: U.S. integrated producers' capacity utilization, by firm and period

Ratio in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table III-6 Continued
Granular PTFE: U.S. integrated producers' share of production, by firm and period

Share in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Figure III-1
Granular PTFE: U.S. integrated producers' production, capacity, and capacity utilization, by period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Integrated producers were asked to report their TFE capacity and production used to produce granular PTFE resin and other products and to describe how demand for TFE in the production of other products affects their ability to produce granular PTFE resin.[13] Table III-7 presents integrated producers' capacity and production of TFE.[14] The highest capacity utilization occurred in 2018 at *** percent. Chemours reported that demand for TFE in the production of other products *** affect its ability to produce granular PTFE resin

[13] Integrated producers were also asked to report purchases of TFE and *** reported ***.
[14] Integrated producers use TFE to produce *** as well as the following non-PTFE products: ***.

***.[15] Daikin reported that ***. However, its highest TFE capacity utilization rate occurred in ***, at *** percent, and was *** percent during January to June 2021.

Table III-7
Upstream TFE: U.S. integrated producers' capacity and production of TFE used to produce granular PTFE resin and other products, by period

Quantities in 1,000 pounds dry weight; shares and ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Capacity	Quantity	***	***	***	***	***
Production: used for granular PTFE resin	Quantity	***	***	***	***	***
Production: used for other PTFE products	Quantity	***	***	***	***	***
Production: used for other products	Quantity	***	***	***	***	***
Production: used internally	Quantity	***	***	***	***	***
Production: sold or shipped externally	Quantity	***	***	***	***	***
Production: All uses	Quantity	***	***	***	***	***
Capacity utilization	Ratio	***	***	***	***	***
Production: used for granular PTFE resin	Share	***	***	***	***	***
Production: used for other PTFE products	Share	***	***	***	***	***
Production: used for other products	Share	***	***	***	***	***
Production: used internally	Share	***	***	***	***	***
Production: sold or shipped externally	Share	***	***	***	***	***
Production: All uses	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

[15] ***. *** producer questionnaire at IV-18.

Table III-8 and figure III-2 present U.S. compounders' production, capacity, and capacity utilization. Compounders' capacity decreased by 25.2 percent between 2018 and 2020 and was the same in interim 2021 compared to interim 2020.[16] Compounders' production of compounded granular PTFE decreased by 53.3 percent during 2018-20, but was 27.1 percent higher in interim 2021 than in interim 2020.[17] Capacity utilization decreased by 13.4 percent from 2018 to 2020, but was 6.9 percentage points higher in interim 2021 than in interim 2020.

Table III-8
Granular PTFE: U.S. compounders' capacity, by firm and by period

Capacity in 1,000 pounds dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	13,405	10,030	10,030	5,015	5,015

Table continued.

Table III-8 Continued
Granular PTFE: U.S. compounders' production, by firm and by period

Production in 1,000 pounds dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	4,772	3,685	2,228	1,275	1,621

Table continued.

[16] The decrease in capacity was due to ***.

[17] *** reported that COVID-19 caused ***. See *** U.S. producer questionnaire at II-2b.

Table III-8 Continued
Granular PTFE: U.S. compounders' capacity utilization ratio, by firm and by period

Ratio in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	35.6	36.7	22.2	25.4	32.3

Table continued.

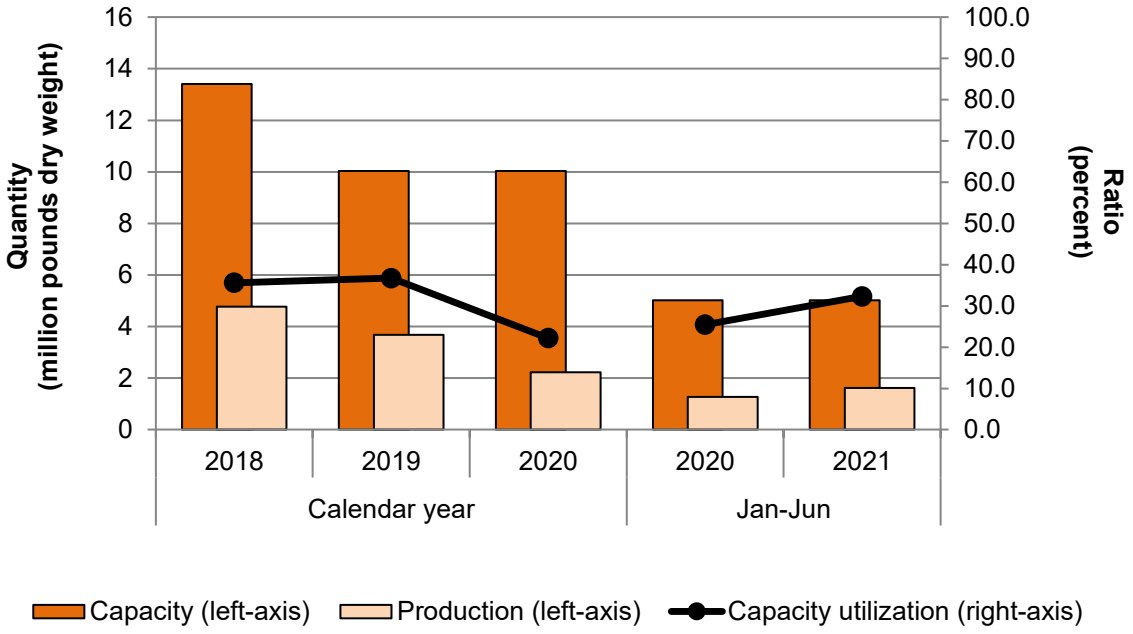
Table III-8 Continued
Granular PTFE: U.S. compounders' share of production, by firm and by period

Share in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Figure III-2
Granular PTFE: U.S. compounders' capacity, production, and capacity utilization, by period



Source: Compiled from data submitted in response to Commission questionnaires.

Table III-9 presents U.S. compounders' production by input type. In 2018, domestic PTFE accounted for the largest share of PTFE that compounders used to produce compounded PTFE, at *** percent, followed by imported nonsubject PTFE, at *** percent, and imported subject PTFE, at *** percent. The share of compounders' production using domestic PTFE decreased by *** percentage points from 2018 to 2020, while the share of compounders' production using subject PTFE increased by *** percentage points. By 2020, the share of compounders' production using domestic PTFE dropped to the second largest share of PTFE that compounders used to produce compounded PTFE.

Table III-9
Granular PTFE: U.S. compounders' production, by input type

Quantity in 1,000 pounds; shares in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production using domestic PTFE	Quantity	***	***	***	***	***
Production using imported subject PTFE	Quantity	***	***	***	***	***
Production using imported nonsubject PTFE	Quantity	***	***	***	***	***
All production	Quantity	4,772	3,685	2,228	1,275	1,621
Production using domestic PTFE	Share	***	***	***	***	***
Production using imported subject PTFE	Share	***	***	***	***	***
Production using imported nonsubject PTFE	Share	***	***	***	***	***
All production	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative products

No U.S. integrated producer reported production of other products using the same machinery, equipment, or employees used to product granular PTFE.[18] Integrated producers reported that they are unable to switch production (capacity) between granular PTFE and other products using the same equipment and/or labor. The ability to switch production from granular PTFE to alternative products is limited by high capital costs and time. For instance, Daikin reported that it takes millions of dollars and nine months to a year to turn a granular reactor into an emulsion reactor to make out-of-scope aqueous dispersion or fine powder PTFE products; finishing equipment cannot be converted at all.[19] In addition, Daikin reported that employees only certified in granular PTFE production cannot be used in the production of aqueous dispersion or fine powder PTFE products and vice versa.[20]

U.S. producers' U.S. shipments and exports

Table III-10 presents U.S. integrated producers' U.S. shipments, export shipments, and total shipments. U.S. producers' U.S. shipments accounted for over two-thirds of total shipments (*** percent in 2020) throughout the period for which data were collected. U.S. shipments by quantity and value decreased overall during 2018-20, by *** percent and *** percent, respectively, but were higher in interim 2021 than in interim 2020, by *** percent and *** percent, respectively. U.S. shipment unit values increased during 2018-19, by *** percent, then decreased during 2019-20 by *** percent, for an overall increase of *** percent, but were *** percent lower in interim 2021 than in interim 2020.

Exports, which accounted for approximately *** of total shipments, decreased *** percent, by quantity, during 2018-20 and were *** percent lower in interim 2021 than in interim 2020. [21]

[18] U.S. compounders were not asked whether other products were produced using the same equipment, machinery, or employees used to compound granular PTFE.

[19] Conference transcript, pp. 12-13, 33 (Cagle), 34 (Meisner).

[20] Conference transcript, p. 12-13 (Cagle).

[21] Integrated producers' principal export markets include the countries ***, and the regions ***.

Table III-10
Granular PTFE: U.S. integrated producers' shipments, by destination and period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; unit values in dollars per pound dry weight; shares in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Share of quantity is the share of total shipments by quantity; share of value is the share of total shipments by value.

Note: One company, ***, reported internal consumption of its granular PTFE to produce other products (***). Over the data collection period, internal consumption accounted for *** percent of U.S. integrated producers' U.S. shipments.

Table III-11 presents U.S. compounders' U.S. shipments, export shipments, and total shipments. U.S. compounders' U.S. shipments accounted for the majority (over *** percent) of total shipments throughout the period for which data were collected.[22] U.S. shipments by quantity and value decreased overall during 2018-20, by *** percent and *** percent, respectively, but were higher in interim 2021 than in interim 2020, by *** percent and *** percent, respectively. Exports, which accounted for less than *** of total shipments, decreased by *** percent during 2018-20, but were *** percent higher in interim 2021 than in interim 2020. [23] Export unit values were between *** and *** percent lower than U.S. shipments.[24]

Table III-11
Granular PTFE: U.S. compounders' shipments, by destination and period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; unit values in dollars per pound dry weight; shares in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Share of quantity is the share of total shipments by quantity; share of value is the share of total shipments by value.

[22] Compounders' U.S. shipments consisted of ***.
[23] Compounders' principal export markets include ***.
[24] ***. Email from ***, November 15, 2021.

As presented in table III-12, staff adjusted U.S. producers' U.S. shipments for use in apparent consumption to avoid double counting the portion of quantity and value of granular PTFE U.S. shipments reported by U.S. compounders that was already reported as an import or shipment to compounders by U.S. producers.

Table III-12
Granular PTFE: U.S. producers' U.S. shipments for use in apparent consumption, by period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. shipments	Quantity	***	***	***	***	***
U.S. shipments fully domestic	Value	***	***	***	***	***
U.S. shipments value added to imports	Value	***	***	***	***	***
U.S. shipments total	Value	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value-added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share, this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by U.S. producers.

U.S. producers' inventories

Table III-13 presents U.S. integrated producers' end-of-period inventories and the ratio of these inventories to U.S. integrated producers' production, U.S. shipments, and total shipments**.** Integrated producers' ending inventories decreased by *** percent during 2018-20 and were *** percent lower in interim 2021 than in interim 2020.

Table III-13
Granular PTFE: U.S. integrated producers' inventories and their ratio to select items, by period

Quantity in 1,000 pounds dry weight; inventory ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-14 presents U.S. compounders' end-of-period inventories and the ratio of these inventories to U.S. compounders' production, U.S. shipments, and total shipments**.** Compounders' ending inventories increased by *** percent during 2018-20, but were *** percent lower in interim 2021 than in interim 2020.

Table III-14
Granular PTFE: U.S. compounders' inventories and their ratio to select items, by period

Quantity in 1,000 pounds dry weight; inventory ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

U.S. producers' imports and purchases

U.S. producers' imports and purchases of granular PTFE are presented in tables III-15 to III-22. Reasons for importation are presented in table III-23. *** U.S. producers directly imported granular PTFE from subject and/or nonsubject sources. *** integrated producers *** directly import granular PTFE from *** sources and *** directly imports from ***.[25] Integrated producer ***. ***."

Table III-15
Granular PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[25] ***. *** importer questionnaire at II-2a.

Table III-16
Granular PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-17
Granular PTFE: *'s U.S. production, U.S. purchases of imports and the overall imports from the relevant subject importers, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
U.S. purchases of imports from India (imported by ***)	Quantity	***	***	***	***	***
U.S. importer ***'s imports from India	Quantity	***	***	***	***	***
Producer's purchases to importer's imports (***)	Ratio	***	***	***	***	***
Overall U.S. imports from India	Quantity	***	***	***	***	***
Producer's purchases to overall imports (***)	Ratio	***	***	***	***	***
U.S. importer ***'s imports from India to U.S. production	Ratio	***	***	***	***	***
U.S. purchases of imports from Russia (imported by ***)	Quantity	***	***	***	***	***
U.S. importer ***'s imports from Russia	Quantity	***	***	***	***	***
Producer's purchases to importer's imports (***)	Ratio	***	***	***	***	***
U.S. importer ***'s imports from Russia to U.S. production	Ratio	***	***	***	***	***
Overall U.S. imports from Russia	Quantity	***	***	***	***	***
Producer's purchases to overall imports (***)	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-18
Granular PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-19
Granular PTFE: *'s U.S. production, U.S. purchases of imports and the overall imports from the relevant subject importers, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
U.S. purchases of imports from India (imported by ***)	Quantity	***	***	***	***	***
U.S. importer ***'s imports from India	Quantity	***	***	***	***	***
Producer's purchases to importer's imports (***)	Ratio	***	***	***	***	***
Overall U.S. imports from India	Quantity	***	***	***	***	***
Producer's purchases to overall imports from India (***)	Ratio	***	***	***	***	***
U.S. purchases of imports from Russia (imported by ***)	Quantity	***	***	***	***	***
U.S. importer ***'s imports from Russia	Quantity	***	***	***	***	***
Producer's purchases to importer's imports (***)	Ratio	***	***	***	***	***
Overall U.S. imports from Russia	Quantity	***	***	***	***	***
Producer's purchases to overall imports from Russia (***)	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-20
PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
*** imports from Russia	Quantity	***	***	***	***	***
*** imports from Russia	Quantity	***	***	***	***	***
All imports from Russia	Quantity	***	***	***	***	***
*** imports from nonsubject sources ***	Quantity	***	***	***	***	***
*** imports from all import sources	Quantity	***	***	***	***	***
Imports from all import sources	Quantity	***	***	***	***	***
*** imports from Russia to U.S. production	Ratio	***	***	***	***	***
*** imports from Russia to U.S. production	Ratio	***	***	***	***	***
All imports from Russia to U.S. production	Ratio	***	***	***	***	***
*** imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***
*** imports from all import sources to U.S. production	Ratio	***	***	***	***	***
Imports from all import sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***.

Table III-21
Granular PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
Imports from India	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from all import sources	Quantity	***	***	***	***	***
Imports from India to U.S. production	Ratio	***	***	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***
Imports from all import sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-22
Granular PTFE: *'s U.S. production, U.S. imports, and ratio of imports to production, by period**

Quantity in 1,000 pounds dry weight; ratio in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. production	Quantity	***	***	***	***	***
Imports from India	Quantity	***	***	***	***	***
Imports from nonsubject sources ***	Quantity	***	***	***	***	***
Imports from all import sources	Quantity	***	***	***	***	***
Imports from India to U.S. production	Ratio	***	***	***	***	***
Imports from nonsubject sources to U.S. production	Ratio	***	***	***	***	***
Imports from all import sources to U.S. production	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires

Table III-23
Granular PTFE: U.S. producers' reasons for importing

Item	Firm's narrative response
***'s reason for importing	***
***'s reason for importing	***
***'s reason for importing	*** Chemours also imports from Russia for competitive benchmarking and from GFL in India to remain competitive in certain markets.
***'s reason for importing	*** Daikin imports specialty grades that it produces in its production facilities in Japan and China that go into applications like automotive and semiconductors. It does not make sense for Daikin to produce these higher priced, lower volume specialty grades in every one of its production facilities around the world.
***'s reason for importing	***

Source: Compiled from data submitted in response to Commission questionnaires and hearing transcript, pp. 119-120 (Pratt and Rubin).

U.S. employment, wages, and productivity

Table III-24 shows U.S. integrated producers' employment-related data. [26] All employment indicators decreased between 2018 and 2020, with the exception of hourly wages and unit labor costs. Conversely, all employment indicators with the exception of hourly wages and unit labor costs were higher in interim 2021 than in interim 2020.

Table III-24
Granular PTFE: U.S. integrated producers' employment related information, by period

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Granular PTFE production requires a minimum number of employees at all times, regardless of the volume of production, in order to maintain safety requirements inherent in a chemical production process.[27] The number of production and related workers ("PRWs") decreased by *** percent during 2018-20, but was *** percent higher in interim 2021 than in interim 2020.[28] Hours worked and wages paid also decreased from 2018-20, by *** percent and *** percent respectively, but were both higher in interim 2021 than in interim 2020, by *** percent and *** percent, respectively. Hourly wages increased by *** percent between 2018 and 2020, but were *** percent lower in interim 2021 than in interim 2020. [29] Unit labor costs increased by *** percent during 2018-20, from $*** to $***, but were *** percent lower in interim 2021 than in interim 2020.

[26] Overall employment trends are driven by ***.
[27] Hearing transcript, p. 29 (Segars).
[28] ***. *** producer questionnaire at II-2b and II-11. ***.
[29] ***.

Table III-25 shows U.S. compounders' employment-related data. All employment indicators decreased between 2018 and 2020, with the exception of hourly wages and unit labor costs. Conversely, all employment indicators, with the exception of the number of PRWs and unit labor costs, were higher in interim 2021 than in interim 2020.

Table III-25
Granular PTFE: U.S. compounders' employment related information, by period

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

The number of PRWs decreased by *** percent during 2018-20 and was *** percent lower in interim 2021 than in interim 2020.[30] Hours worked and wages paid also decreased from 2018-20, by *** percent and *** percent respectively, but were both higher in interim 2021 than in interim 2020, by *** percent and *** percent, respectively. Hourly wages increased by *** percent between 2018 and 2020, and were *** percent higher in interim 2021 than in interim 2020. Unit labor costs increased by *** percent during 2018-20, from $*** to $***, but were *** percent lower in interim 2021 than in interim 2020.

[30] ***.

Table III-26 shows U.S. integrated producers' and compounders' employment-related data, combined.

Table III-26
Granular PTFE: U.S. integrated producers' and compounders' combined employment related data, by period

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part IV: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 126 firms believed to be potential importers of subject granular PTFE, as well as to all U.S. producers of granular PTFE.[1] Usable questionnaire responses were received from 12 companies, which staff believe represent the vast majority of granular PTFE imports from India and Russia and an estimated *** percent of imports from nonsubject sources, in 2020.[2] Table IV-1 lists all responding U.S. importers of PTFE from India, Russia and other sources, their locations, and their shares of U.S. imports, in 2020.

[1] The Commission issued questionnaires to those firms identified in the petitions, along with firms that, based on a review of data from third-party sources, may have accounted for more than one percent of total imports under HTS subheading 3904.61.0010 and 3904.69.5000 in 2020. Twenty-eight firms certified that they have not imported granular PTFE resin into the U.S. since January 1, 2018 (including ***).

[2] Coverage was calculated based on official statistics using HTS statistical reporting number 3904.61.0010, by dividing the quantity of imports reported in importer questionnaires by the quantity of imports, as reported in official statistics. The quantity of imports reported in official import statistics (i.e., the denominator) was modified by subtracting *** pounds of out-of-scope merchandise imported by *** from *** sources under the relevant HTS number. Email from ***, October 3, 2021. Imports from Russia as reported in questionnaires accounted for *** percent of imports from Russia as reported in official import statistics, while imports from India reported in questionnaires accounted for *** of imports from India reported in official import statistics. Staff believe the importer questionnaires received account for all firms that imported granular PTFE from India and Russia, as staff received importer questionnaires from all importers that ***, respectively, reported that they sell to. Differences in import quantities reported in questionnaires and official import statistics are likely due to timing differences and recordkeeping. Another potential source of discrepancy is the fact that ***.

Table IV-1
Granular PTFE: U.S. importers, their headquarters, and share of imports within each source, 2020

Share in percent

Firm	Headquarters	India	Russia	Subject	Nonsubject sources	All import sources
3M	Saint Paul, MN	***	***	***	***	***
AGC	Exton, PA	***	***	***	***	***
Chemours	Wilmington, DE	***	***	***	***	***
Daikin	Orangeburg, NY	***	***	***	***	***
Flontech	Pittston, PA	***	***	***	***	***
Freudenberg	Plymouth, MI	***	***	***	***	***
GFL Americas	Irving, TX	***	***	***	***	***
HaloPolymer Trading	Houston, TX	***	***	***	***	***
Poly-Smith	Keyport, NJ	***	***	***	***	***
Solvay	Alpharetta, GA	***	***	***	***	***
Trelleborg	Fort Wayne, IN	***	***	***	***	***
Trinseo	Berwyn, PA	***	***	***	***	***
All firms	Various	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***

Table IV-2 and figure IV-1 present data for U.S. imports of granular PTFE from India, Russia and all other sources. Between 2018 and 2020, U.S. imports from all sources decreased by 25.2 percent in quantity and 47.2 percent in value, and were *** percent lower in quantity, but *** percent higher in value, in interim 2021 than in interim 2020.

Imports from subject sources decreased by 13.8 percent in quantity and 18.0 percent in value between 2018 and 2019, then increased by 1.1 percent in quantity but decreased by 26.3 percent in value from 2019 to 2020, for an overall 12.8 percent decrease in quantity and a 39.6 percent decrease in value during 2018-20, and were *** percent lower in quantity and *** percent lower in value in interim 2021 than in interim 2020. Imports from India increased by *** percent in quantity and *** percent in value during 2018-19, then decreased by *** percent in quantity and *** percent in value from 2019 to 2020, for an overall *** percent decrease in quantity and *** percent decrease in value during 2018-20, and were *** percent lower in quantity and *** percent lower in value in interim 2021 than in interim

2020.[3] Imports from Russia decreased from 2018 to 2019 by *** percent in quantity and *** percent in value, then increased from 2019 to 2020 by *** percent from in quantity and decreased *** percent in value, for an overall decrease of *** percent in quantity and *** percent in value during 2018-20, and were *** percent lower in quantity and *** percent lower in value in interim 2021 than in interim 2020.[4]

During 2018-20, nonsubject imports decreased by quantity and value by 45.7 percent and 55.4 percent, respectively, but were higher in quantity and value in interim 2021 than in interim 2020, by *** percent and *** percent, respectively.[5]

Average unit values ("AUVs") from both subject and nonsubject sources decreased during 2018-20, by 30.7 percent and 17.8 percent, respectively, but were both higher in interim 2021 than in interim 2020, by *** percent and *** percent, respectively.

Subject imports as a share of total imports increased by 10.3 percentage points, from 62.5 percent in 2018 to 72.8 percent in 2020, but were *** percentage points lower in interim 2021 than in interim 2020. Nonsubject imports as a share of total imports decreased by the same amount and accounted for 27.2 percent of total imports in 2020. The ratio of subject imports to U.S. production increased by *** percentage points during 2018-20, from *** percent to *** percent, but was *** percentage points lower in interim 2021 than in interim 2020.

Import trends were affected in part by the preliminary antidumping duties on PTFE resin, including granular PTFE, from China and India and the section 301 duties on granular PTFE imports from China. After the preliminary antidumping duties were removed in June 2018,

[3] Import trends for granular PTFE from India are driven by ***. *** importer questionnaire at II-2b.

[4] Import trends for granular PTFE from Russia are driven by ***." Staff correspondence with ***, February 19, 2021. ***. *** producer questionnaire at II-2b.

[5] Imports were reported from the following nonsubject countries: ***.

imports from India returned to the U.S. market while imports from China remained low due to the imposition of section 301 tariffs.[6] In addition, *** reported higher import and commercial shipment unit values in 2018 due to "tightening environmental requirements in China during 2018 that resulted in a suspension of Chinese production and an increase in the cost to Chinese manufacturers of complying with new environmental regulations. This, in turn, led to a global shortage, which led to a price spike."[7] *** also reported higher shipments and unit values in 2018 due to supply shortages and increasing demand in the granular PTFE market.[8]

Table IV-2
Granular PTFE: U.S. imports by source and period

Quantity in 1,000 pounds dry weight; Value in 1,000 dollars; Unit values in dollars per pound dry weight

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
India	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	8,316	7,168	7,248	4,413	***
Nonsubject sources	Quantity	4,988	4,653	2,706	1,571	***
All import sources	Quantity	13,304	11,821	9,954	5,985	***
India	Value	***	***	***	***	***
Russia	Value	***	***	***	***	***
Subject sources	Value	36,686	30,068	22,169	13,330	***
Nonsubject sources	Value	34,093	32,713	15,203	8,707	***
All import sources	Value	70,779	62,781	37,372	22,037	***
India	Unit value	***	***	***	***	***
Russia	Unit value	***	***	***	***	***
Subject sources	Unit value	4.41	4.19	3.06	3.02	***
Nonsubject sources	Unit value	6.84	7.03	5.62	5.54	***
All import sources	Unit value	5.32	5.31	3.75	3.68	***

Table continued.

[6] Conference transcript, pp. 21, 34-36 (Rubin).
[7] Staff correspondence with ***, February 19, 2021.
[8] Staff correspondence with ***, February 11, 2021, and with ***, February 19, 2021.

Table IV-2 Continued
Granular PTFE: Share of U.S. imports by source and period

Shares and ratios in percent; Ratios represent the ratio to U.S. production

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
India	Share of quantity	***	***	***	***	***
Russia	Share of quantity	***	***	***	***	***
Subject	Share of quantity	62.5	60.6	72.8	73.7	***
Nonsubject sources	Share of quantity	37.5	39.4	27.2	26.3	***
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
India	Share of value	***	***	***	***	***
Russia	Share of value	***	***	***	***	***
Subject	Share of value	51.8	47.9	59.3	60.5	***
Nonsubject sources	Share of value	48.2	52.1	40.7	39.5	***
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
India	Ratio	***	***	***	***	***
Russia	Ratio	***	***	***	***	***
Subject	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Table continued.

Table IV-2 Continued
Granular PTFE: U.S. imports by source and period

%Δ in percent change

Source	Measure	2018-20	2018-19	2019-20	Jan-Jun 2020-21
India	%Δ Quantity	▼***	▲***	▼***	▼***
Russia	%Δ Quantity	▼***	▼***	▲***	▼***
Subject sources	%Δ Quantity	▼(12.8)	▼(13.8)	▲1.1	▼***
Nonsubject sources	%Δ Quantity	▼(45.7)	▼(6.7)	▼(41.8)	▲***
All import sources	%Δ Quantity	▼(25.2)	▼(11.1)	▼(15.8)	▼***
India	%Δ Value	▼***	▲***	▼***	▼***
Russia	%Δ Value	▼***	▼***	▼***	▼***
Subject sources	%Δ Value	▼(39.6)	▼(18.0)	▼(26.3)	▼***
Nonsubject sources	%Δ Value	▼(55.4)	▼(4.0)	▼(53.5)	▲***
All import sources	%Δ Value	▼(47.2)	▼(11.3)	▼(40.5)	▲***
India	%Δ Unit value	▼***	▲***	▼***	▼***
Russia	%Δ Unit value	▼***	▼***	▼***	▲***
Subject sources	%Δ Unit value	▼(30.7)	▼(4.9)	▼(27.1)	▲***
Nonsubject sources	%Δ Unit value	▼(17.8)	▲2.9	▼(20.1)	▲***
All import sources	%Δ Unit value	▼(29.4)	▼(0.2)	▼(29.3)	▲***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure IV-1
Granular PTFE: U.S. import quantities and average unit values, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

All six U.S. producers are also U.S. importers. Table IV-3 presents U.S. imports imported by U.S. producers, by source and by period.

Table IV-3
Granular PTFE: U.S. imports controlled by U.S. producers or affiliated U.S. importers, by source and by period

Quantity in 1,000 pounds dry weight; Shares in percent.

Source	Firm type	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
India	Integrated producers	Quantity	***	***	***	***	***
Russia	Integrated producers	Quantity	***	***	***	***	***
Subject sources	Integrated producers	Quantity	***	***	***	***	***
Nonsubject sources	Integrated producers	Quantity	***	***	***	***	***
All import sources	Integrated producers	Quantity	***	***	***	***	***
India	Integrated producers	Share controlled	***	***	***	***	***
Russia	Integrated producers	Share controlled	***	***	***	***	***
Subject sources	Integrated producers	Share controlled	***	***	***	***	***
Nonsubject sources	Integrated producers	Share controlled	***	***	***	***	***
All import sources	Integrated producers	Share controlled	***	***	***	***	***
India	Compounders	Quantity	***	***	***	***	***
Russia	Compounders	Quantity	***	***	***	***	***
Subject sources	Compounders	Quantity	***	***	***	***	***
Nonsubject sources	Compounders	Quantity	***	***	***	***	***
All import sources	Compounders	Quantity	***	***	***	***	***
India	Compounders	Share controlled	***	***	***	***	***
Russia	Compounders	Share controlled	***	***	***	***	***
Subject sources	Compounders	Share controlled	***	***	***	***	***
Nonsubject sources	Compounders	Share controlled	***	***	***	***	***
All import sources	Compounders	Share controlled	***	***	***	***	***

Table continued.

Table IV-3 Continued
Granular PTFE: U.S. imports controlled by U.S. producers or affiliated U.S. importers, by source and by period

Quantity in 1,000 pounds dry weight; Shares in percent.

Source	Firm type	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
India	Both	Quantity	***	***	***	***	***
Russia	Both	Quantity	***	***	***	***	***
Subject sources	Both	Quantity	***	***	***	***	***
Nonsubject sources	Both	Quantity	***	***	***	***	***
All import sources	Both	Quantity	***	***	***	***	***
India	Both	Share controlled	***	***	***	***	***
Russia	Both	Share controlled	***	***	***	***	***
Subject sources	Both	Share controlled	***	***	***	***	***
Nonsubject sources	Both	Share controlled	***	***	***	***	***
All import sources	Both	Share controlled	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[9] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[10] Imports from India accounted for *** percent and imports from Russia accounted for *** percent of total imports of granular PTFE, by quantity, during 2020.

Table IV-4
Granular PTFE: U.S. imports in the twelve-month period preceding the filing of the petitions, January 2020 through December 2020

Quantity in 1,000 pounds dry weight; Share of quantity in percent

Source of imports	Quantity	Share of quantity
India	***	***
Russia	***	***
Subject sources	7,248	72.8
Nonsubject sources	2,706	27.2
All import sources	9,954	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

[9] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

[10] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Critical circumstances

On January 25, 2022, Commerce issued final determinations that "critical circumstances" exist with regard to imports from India of granular PTFE resin from Gujarat Fluorochemicals Limited (GFCL) and for all other producers and exporters in its antidumping and countervailing duty investigation.[11] If both Commerce and the Commission make affirmative final critical circumstances determinations in the antidumping investigations, certain subject imports may be subject to antidumping duties retroactive by 90 days from September 2, 2021, the effective date of Commerce's preliminary affirmative LTFV determination. If both Commerce and the Commission make affirmative final critical circumstances determinations in the countervailing duty investigations, certain subject imports may be subject to countervailing duties retroactive by 90 days from July 6, 2021, the effective date of Commerce's preliminary affirmative CVD determination. Tables IV-5 and IV-6 along with Figure IV-2 present these data.

Table IV-5
Granular PTFE: U.S. imports from India subject to final affirmative Commerce critical circumstances determinations, by month and year

Quantity in 1,000 pounds dry weight

Month	Relation to petitions	Quantity
August 2020	Before	211
September 2020	Before	374
October 2020	Before	139
November 2020	Before	245
December 2020	Before	345
January 2021	Before	240
February 2021	After	462
March 2021	After	408
April 2021	After	618
May 2021	After	494
June 2021	After	385
July 2021	After	546

Table continued.

[11] 87 FR 3765 and 87 FR 3772, January 25, 2022, referenced in app. A. When petitioners file timely allegations of critical circumstances, Commerce examines whether there is a reasonable basis to believe or suspect that (1) either there is a history of dumping and material injury by reason of dumped imports in the United States or elsewhere of the subject merchandise, or the person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the subject merchandise at LTFV and that there was likely to be material injury by reason of such sales; and (2) there have been massive imports of the subject merchandise over a relatively short period.

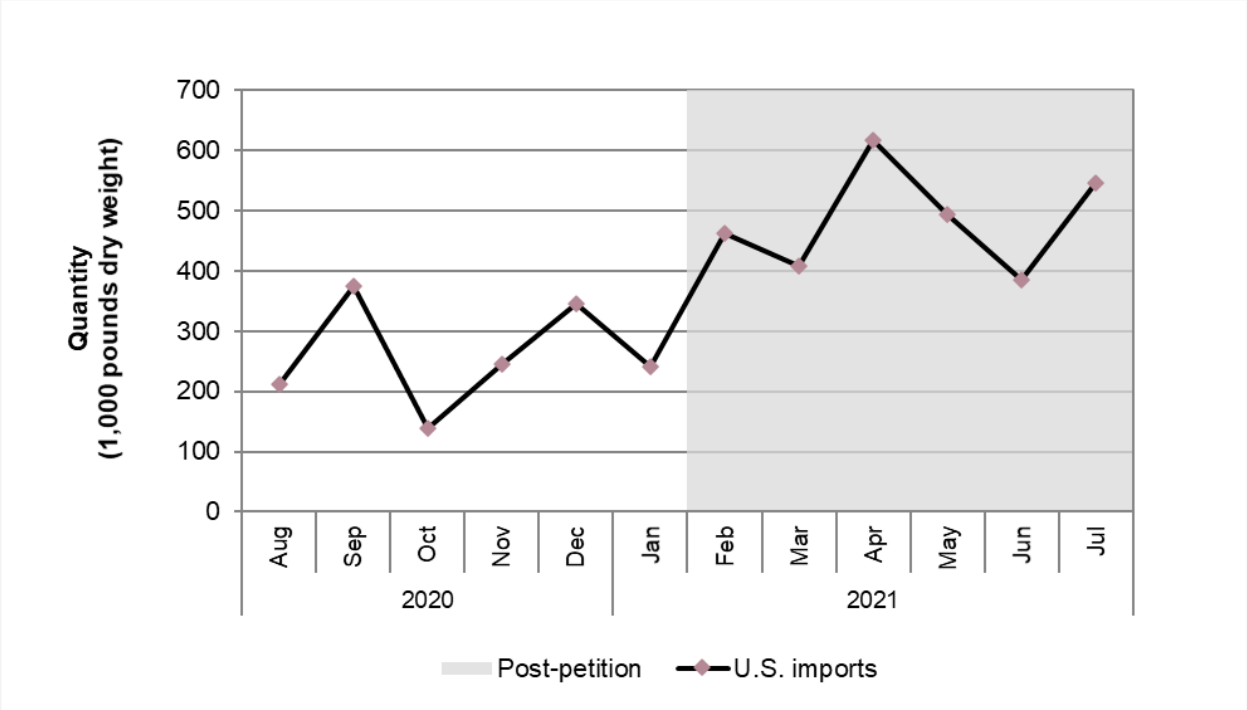
Table IV-5 Continued
Granular PTFE: U.S. imports from India subject to final affirmative Commerce critical circumstances determinations, by month and year

Quantity in 1,000 pounds dry weight

Comparison pre-post petitions period	Cumulative before period quantity	Cumulative after period quantity	Difference in percent
1 month	240	462	92.3
2 months	585	871	48.8
3 months	830	1,488	79.2
4 months	969	1,983	104.5
5 months	1,344	2,367	76.2
6 months	1,555	2,913	87.3

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series.

Figure IV-2
Granular PTFE: U.S. imports from India subject to final affirmative Commerce critical circumstances determinations, by month and year



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series.

Table IV-6
Granular PTFE: U.S. importers' U.S. end-of-period inventories subject to Commerce's final critical circumstance determinations, by period

Quantity in 1,000 pounds dry weight; Index in percent

Month	Quantity	Index
January 31, 2021	***	***
February 28,2021	***	▼***
March 31, 2021	***	▼***
April 30, 2021	***	▼***
May 31, 2021	***	▼***
June 30, 2021	***	▼***
July 31, 2021	***	▼***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Index is the index of end-of-period inventory levels to the end-of-period inventory level on January 31, 2021 (i.e., January 31 = 100.0 percent).

Cumulation considerations

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

Fungibility

Table IV-7 presents U.S. producers' and U.S. importers' U.S. shipments by type. The majority of U.S. producers' and U.S. importers' U.S. shipments were uncompounded.[12]

Table IV-7
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments, by source and product type, 2020

Quantity in 1,000 pounds dry weight

Source	Compounded	Uncompounded	All types
U.S. producers	***	***	***
India	***	***	***
Russia	***	***	***
Subject sources	***	***	6,551
Nonsubject sources	***	***	3,418
All import sources	***	***	9,970
All sources	***	***	***

Table continued.

Table IV-7 Continued
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments, by source and product type, 2020

Share across in percent

Source	Compounded	Uncompounded	All types
U.S. producers	***	***	100.0
India	***	***	100.0
Russia	***	***	100.0
Subject sources	***	***	100.0
Nonsubject sources	***	***	100.0
All import sources	***	***	100.0
All sources	***	***	100.0

Table continued.

[12] *** importers, *** reported importing compounded granular PTFE from Russia. However, as stated previously, ***. *** U.S. shipments accounted for *** percent in 2018, *** percent in 2019, *** percent in 2020, *** percent in interim 2020, and *** percent in interim 2021 of total shipments from Russia.

Table IV-7 Continued
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments, by source and product type, 2020

Share down in percent

Source	Compounded	Uncompounded	All types
U.S. producers	***	***	***
India	***	***	***
Russia	***	***	***
Subject sources	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
All sources	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Figure IV-3 presents U.S. producers' and U.S. importers' U.S. shipments, by type.

Figure IV-3
Granular PTFE: U.S. producers' and U.S. importers' U.S. shipments, by source and product type, 2020

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Staff calculated the series entitled "domestically compounded" based on U.S. compounders' reported production of compounded PTFE, by source, controlling the portion that pure PTFE accounts for out of compounded PTFE quantities. Based on these data, U.S. compounders compounded approximately *** percent of U.S. producers' U.S. shipments; *** percent of U.S. importers' U.S. shipments of imports from India; *** percent for Russia; *** percent for subject sources; and *** percent for nonsubject sources.

Geographical markets

U.S. producers and importers reported selling granular PTFE to all regions in the contiguous United States. Table IV-8 presents U.S. imports by border of entry in 2020. In 2020, the majority of granular PTFE from subject sources entered through the eastern and southern borders of entry, based on official import statistics.

Table IV-8
Granular PTFE: U.S. imports by source and border of entry, 2020

Quantity in 1,000 pounds dry weight

Source	East	North	South	West	All borders
India	3,287	4	417	0	3,709
Russia	2,433	13	1,497	---	3,943
Subject sources	5,720	17	1,914	0	7,651
Nonsubject sources	4,337	252	109	1	4,700
All import sources	10,057	270	2,023	1	12,351

Table continued.

Table IV-8 Continued
Granular PTFE: U.S. imports by source and border of entry, 2020

Share across percent

Source	East	North	South	West	All borders
India	88.6	0.1	11.3	0.0	100.0
Russia	61.7	0.3	38.0	---	100.0
Subject sources	74.8	0.2	25.0	0.0	100.0
Nonsubject sources	92.3	5.4	2.3	0.0	100.0
All import sources	81.4	2.2	16.4	0.0	100.0

Table continued.

Table IV-8 Continued
Granular PTFE: U.S. imports by source and border of entry, 2020

Share down percent

Source	East	North	South	West	All borders
India	32.7	1.6	20.6	10.0	30.0
Russia	24.2	4.8	74.0	---	31.9
Subject sources	56.9	6.4	94.6	10.0	61.9
Nonsubject sources	43.1	93.6	5.4	90.0	38.1
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series. .

Presence in the market

Table IV-9 and figures IV-4 and IV-5 present monthly U.S. imports of granular PTFE. Imports of granular PTFE from all sources were present in the U.S. market in every month from January 2018 through September 2021.

Table IV-9
Granular PTFE: Quantity of U.S. imports, by source and month

Quantity in 1,000 pounds dry weight

Year	Month	India	Russia	Subject sources	Nonsubject sources	All import sources
2018	January	312	212	524	590	1,114
2018	February	273	318	591	729	1,320
2018	March	126	268	393	633	1,026
2018	April	103	271	374	811	1,185
2018	May	556	272	828	256	1,084
2018	June	461	234	695	525	1,221
2018	July	343	383	726	528	1,254
2018	August	141	677	818	641	1,459
2018	September	765	634	1,399	403	1,802
2018	October	767	537	1,303	617	1,920
2018	November	937	497	1,434	489	1,923
2018	December	674	325	999	609	1,608
2019	January	804	111	915	501	1,416
2019	February	674	214	888	578	1,467
2019	March	1,090	158	1,248	606	1,855
2019	April	445	127	572	725	1,297
2019	May	1,386	215	1,601	567	2,168
2019	June	1,081	209	1,291	639	1,930
2019	July	1,102	144	1,246	697	1,944
2019	August	658	209	868	451	1,319
2019	September	109	117	226	444	670
2019	October	120	399	519	407	926
2019	November	180	96	277	373	649
2019	December	67	301	368	367	735

Table continued.

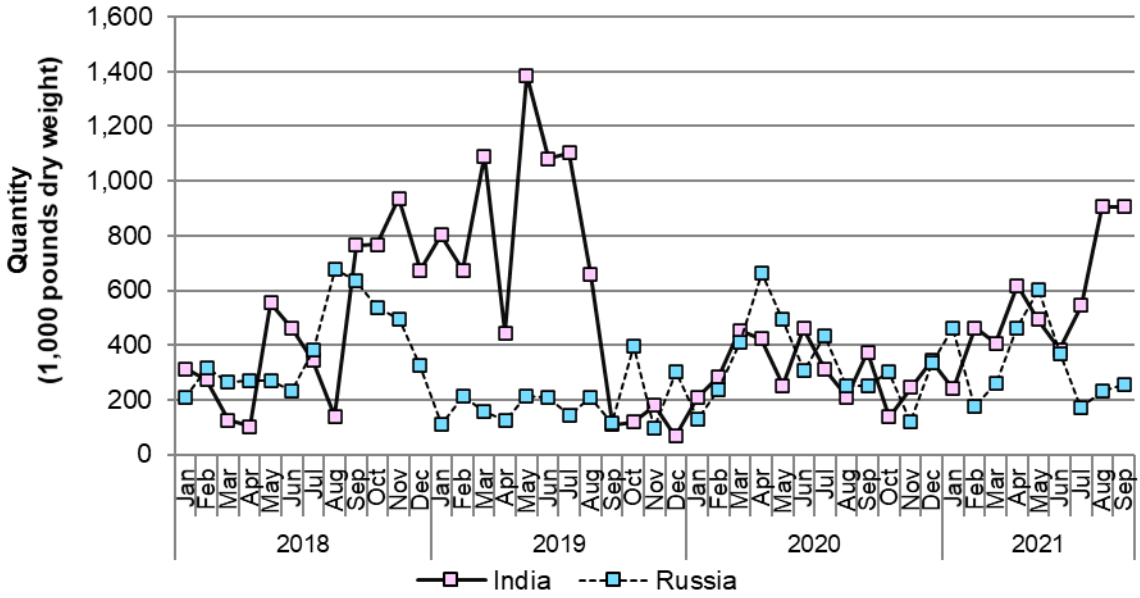
Table IV-9 continued
Granular PTFE: Quantity of U.S. imports, by source and month

Quantity in 1,000 pounds dry weight

Year	Month	India	Russia	Subject sources	Nonsubject sources	All import sources
2020	January	207	128	335	338	674
2020	February	286	238	524	483	1,007
2020	March	454	412	866	508	1,374
2020	April	423	662	1,084	486	1,571
2020	May	253	493	746	473	1,218
2020	June	460	310	770	303	1,073
2020	July	311	433	745	395	1,139
2020	August	211	251	463	443	906
2020	September	374	253	628	307	934
2020	October	139	303	441	397	839
2020	November	245	122	368	254	622
2020	December	345	337	682	312	994
2021	January	240	464	704	336	1,040
2021	February	462	177	639	450	1,089
2021	March	408	259	667	459	1,125
2021	April	618	461	1,078	681	1,759
2021	May	494	603	1,098	610	1,708
2021	June	385	367	752	679	1,431
2021	July	546	172	717	621	1,338
2021	August	907	233	1,140	712	1,852
2021	September	905	258	1,163	633	1,796

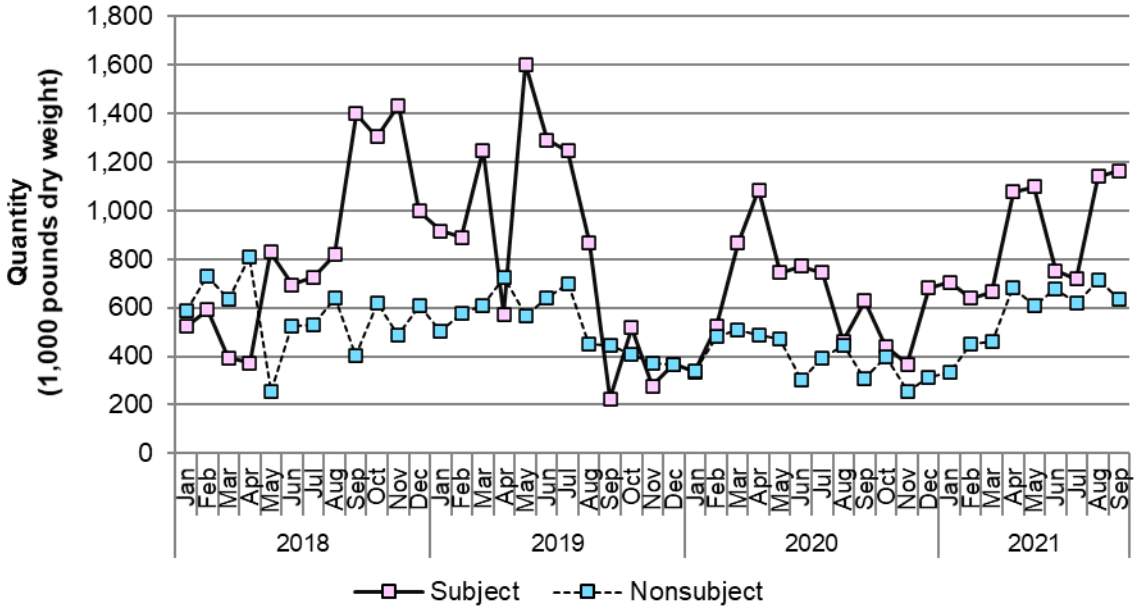
Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series.

Figure IV-4
Granular PTFE: U.S. imports from individual subject source, by source and month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series.

Figure IV-5
Granular PTFE: U.S. imports from aggregated subject and nonsubject sources, by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using statistical reporting number 3904.61.0010, accessed November 22,2021. Imports are based on the imports for consumption data series.

Apparent U.S. consumption

Table IV-10 and figure IV-6 present data on apparent U.S. consumption for granular PTFE. The quantity of apparent U.S. consumption decreased by *** percent during 2018-2020 but was *** percent higher in interim 2021 than in interim 2020. The value of apparent U.S. consumption decreased by *** percent during 2018-2020, but was *** percent higher in interim 2021 than in interim 2020.

Table IV-10
PTFE: Apparent U.S. consumption, by source and period

Quantity in 1,000 pounds dry weight; Value in 1,000 dollars

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. producers	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	6,814	7,223	6,551	3,892	***
Nonsubject sources	Quantity	5,375	4,415	3,418	1,643	***
All import sources	Quantity	12,189	11,638	9,970	5,535	***
All sources	Quantity	***	***	***	***	***
U.S. producers' fully domestic value	Value	***	***	***	***	***
U.S. producers' value added to imports	Value	***	***	***	***	***
U.S. producers' total value	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Russia	Value	***	***	***	***	***
Subject sources	Value	33,625	32,925	25,197	15,227	***
Nonsubject sources	Value	39,069	32,880	24,918	12,736	***
All import sources	Value	72,695	65,805	50,115	27,963	***
All sources	Value	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value-added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share, this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by U.S. producers.

Figure IV-6
PTFE: Apparent U.S. consumption, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires

U.S. market shares

U.S. market share data are presented in table IV-11. Between 2018 and 2020, U.S. producers' market share, by quantity, decreased by *** percentage points and nonsubject import market share decreased by *** percentage points, while subject import market share increased by *** percentage points. U.S. producers' market share and nonsubject import market share, by quantity, were higher in interim 2021 than in interim 2020, by *** and *** percentage points, respectively, while subject import market share was *** percentage points lower in interim 2021 than in interim 2020.

Table IV-11
PTFE: Apparent U.S. consumption and market shares, by source and period

Shares in percent

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. producers	Share of quantity	***	***	***	***	***
India	Share of quantity	***	***	***	***	***
Russia	Share of quantity	***	***	***	***	***
Subject sources	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	***	***	***	***	***
All sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. producers fully domestic value	Share of value	***	***	***	***	***
U.S. producers value added to imports	Share of value	***	***	***	***	***
U.S. producers' total value	Share of value	***	***	***	***	***
India	Share of value	***	***	***	***	***
Russia	Share of value	***	***	***	***	***
Subject sources	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	***	***	***	***	***
All sources	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Part V: Pricing data

Factors affecting prices

Raw material costs

Granular PTFE is made of ammonium, chloroform, citric acid, fluorspar, hydrogen fluoride, sulfuric acid, and vinyl ethers. Chloroform makes up over half of the raw material cost. Raw materials made up approximately *** of the total cost of goods sold ("COGS") throughout the period.

Since January 2018, *** U.S. producers[1] and all responding importers reported that raw materials prices increased. *** reported that chloroform prices fluctuated for much of 2018 to 2020 and have increased due to shortages into 2021. U.S. importer *** reported that high demand for fluorspar has led to increased raw material costs for granular PTFE.

U.S. inland transportation costs

All responding U.S. producers and importers reported that they typically arrange transportation to their customers. U.S. producers reported that U.S. inland transportation costs ranged from *** to *** percent while most importers reported costs up to *** percent.

Pricing practices

Pricing methods

U.S. producers reported using SAP Reports[2] to set prices while importers noted using SAP Reports with past invoices. Most firms reported using contracts and transaction-by-transaction negotiations to set prices for granular PTFE (table V-1).

[1] In this part of the report, "U.S. producers" refers to integrated producers of granular PTFE, unless otherwise indicated.

[2] SAP Reports is a business intelligence application that provides production insights to companies to aid in business related decision making.

Table V-1
Granular PTFE: U.S. producers' and importers' reported price setting methods, count

Method	U.S. producers	U.S. importers
Transaction-by-transaction	***	8
Contract	***	7
Set price list	***	1
Other	***	0
Responding firms	2	9

Source: Compiled from data submitted in response to Commission questionnaires.

Note: The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

U.S. producers reported *** in long-term, annual, and short-term contracts with ***. Importers reported that *** (table V-2). ***. U.S. importers reported a typical short-term contract was for 60 or 90 days.

Table V-2
Granular PTFE: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2020

Share in percent

Item	U.S. producers	Subject U.S. importers
Long-term contracts	***	***
Annual contract	***	***
Short-term contracts	***	***
Spot sales	***	***
Total	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Because of rounding, figures may not add to the totals shown.

Four purchasers reported that they purchase product daily, five purchase weekly, five purchase monthly, and four quarterly. *** reported making purchases twice every month. Sixteen of 18 responding purchasers reported that their purchasing frequency had not changed since 2018. The majority of purchasers (17 of 18) contact 1 to 5 suppliers before making a purchase.

Sales terms and discounts

U.S. producers (***) and importers (4 of 5) typically quote prices on a delivered basis. *** U.S. producers and 4 of 9 importers provide quantity discounts, volume discounts, or discounts under negotiated ad hoc terms. ***. Importer *** reported that volume pricing is considered for large quantity purchases.

Price leadership

Twelve purchasers identified one or more price leaders in the U.S. market, two purchasers reported that there were no price leaders, and four did not provide a response. Four purchasers reported that Daikin was a leader and three reported that Chemours was a price leader. Purchaser *** reported that Chemours and Daikin initiate pricing initiatives globally, while *** reported that Chemours' and Daikin's influence is normally in the form of price increases. Other firms mentioned as price leaders were AGC, Flontech, Fluorogistx, and Donguye.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following granular PTFE products shipped to unrelated U.S. customers during January 2018 to June 2021.

Product 1.-- Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Product 2.-- Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

Product 3.-- Granular PTFE resin, moulding grade, bulk density 450-600g/L, 110-250um average particle size, not modified, not filled, in packages of 25kg or greater.

Two U.S. producers and three importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[3] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' U.S. shipments of granular PTFE and 100 percent of U.S. shipments of subject imports from India and Russia in 2020.[4] No U.S. producers or importers of Indian product provided data for product 3.[5] Price data for products 1-3 are presented in tables V-3 to V-5 and figures V-1 to V-3.

[3] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

[4] Pricing coverage is based on U.S. shipments reported in questionnaires.

[5] One U.S. producer, ***, provided data for product 3. ***. Staff has not included in the dataset since it would be double counting with data reported in products 1 and 2.

Table V-3
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarter

Price in dollars per dry pounds, quantity in dry pounds, margin in percent.

Period	US price	US quantity	India price	India quantity	India margin	Russia price	Russia quantity	Russia margin
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Figure V-1
Granular PTFE: Weighted-average prices and quantities of domestic and imported product 1, by quarter

Price of product 1

* * * * * * *

Volume of product 1

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 1: Granular PTFE resin, fine cut, bulk density 350-500g/L, 30-60um average particle size, not modified, not filled, in packages of 25kg or greater.

Table V-4
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarter

Price in dollars per dry pounds, quantity in dry pounds, margin in percent.

Period	US price	US quantity	India price	India quantity	India margin	Russia price	Russia quantity	Russia margin
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

Figure V-2
Granular PTFE: Weighted-average prices and quantities of domestic and imported product 2, by quarter

Price of product 2

* * * * * * *

Volume of product 2

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 2: Granular PTFE resin, free flowing, bulk density 500-900g/L, 290-700um average particle size, not modified, not filled, in packages of 25kg or greater.

Table V-5
Granular PTFE: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarter

Price in dollars per dry pounds, quantity in dry pounds, margin in percent.

Period	US price	US quantity	India price	India quantity	India margin	Russia price	Russia quantity	Russia margin
2018 Q1	***	***	***	***	***	***	***	***
2018 Q2	***	***	***	***	***	***	***	***
2018 Q3	***	***	***	***	***	***	***	***
2018 Q4	***	***	***	***	***	***	***	***
2019 Q1	***	***	***	***	***	***	***	***
2019 Q2	***	***	***	***	***	***	***	***
2019 Q3	***	***	***	***	***	***	***	***
2019 Q4	***	***	***	***	***	***	***	***
2020 Q1	***	***	***	***	***	***	***	***
2020 Q2	***	***	***	***	***	***	***	***
2020 Q3	***	***	***	***	***	***	***	***
2020 Q4	***	***	***	***	***	***	***	***
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 3: Granular PTFE resin, moulding grade, bulk density 450-600g/L, 110 to250um average particle size, not modified, not filled, in packages of 25kg or greater.

Figure V-3
Granular PTFE: Weighted-average prices and quantities of domestic and imported product 3, by quarter

Price of product 3

* * * * * * *

Volume of product 3

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Product 3: Granular PTFE resin, moulding grade, bulk density 450-600g/L, 110-250um average particle size, not modified, not filled, in packages of 25kg or greater.

Price trends

In general, prices fluctuated during January 2018 to June 2021. Table V-6 summarizes the price trends, by country and by product. As shown in the table, during January 2018 to June 2021, domestic prices of product 1 increased by *** percent and prices of product 2 decreased by *** percent. Indian import prices increased by *** percent for product 1 and by *** percent for product 2. Russian import price decreases ranged from *** percent to *** percent for all three products.

Table V-6
Granular PTFE: Summary of price data, by product and source

Volume in dry pounds, price in dollars per dry pounds

Product	Source	Number of quarters	Quantity	Low price	High price	First quarter price	Last quarter price	Change over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	India	***	***	***	***	***	***	***
Product 1	Russia	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	India	***	***	***	***	***	***	***
Product 2	Russia	***	***	***	***	***	***	***
Product 3	United States	***	***	***	***	***	***	***
Product 3	India	***	***	***	***	***	***	***
Product 3	Russia	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Percent change column is percentage change from the first quarter 2018 to the second quarter 2021.

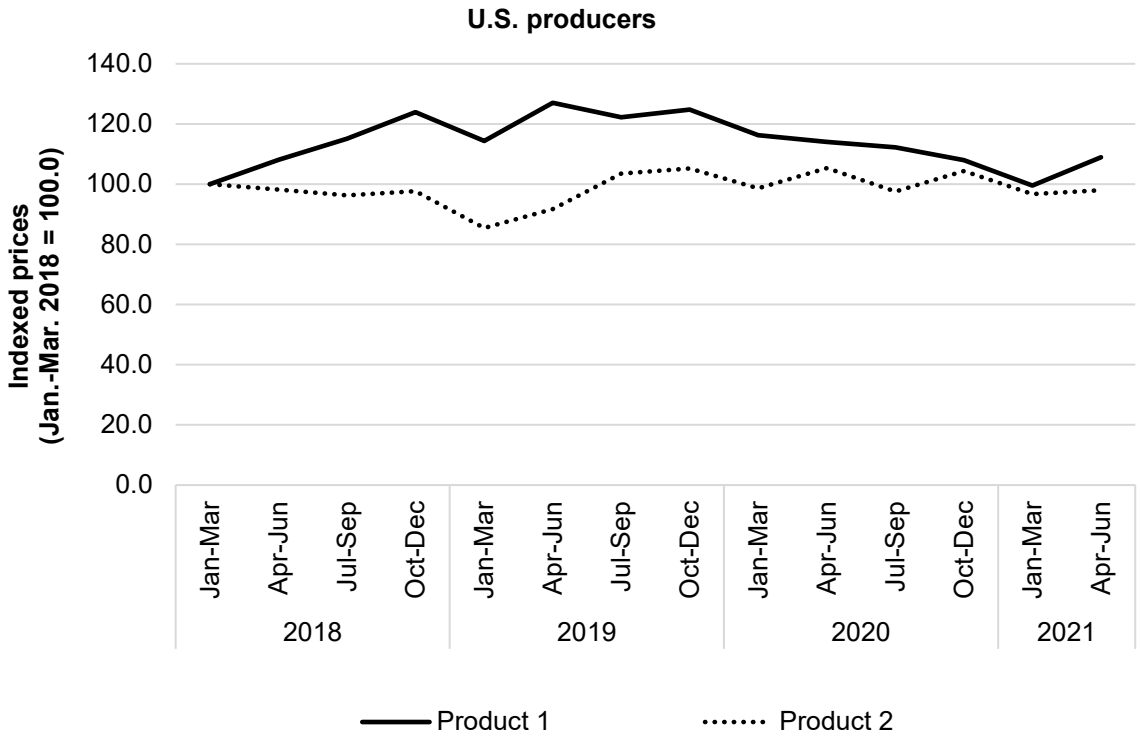
Table V-7
Granular PTFE: Indexed U.S. producer prices

Indexed prices in percent

Period	Product 1	Product 2
2018 Q1	100.0	100.0
2018 Q2	108.1	98.2
2018 Q3	115.2	96.3
2018 Q4	123.9	97.7
2019 Q1	114.4	85.4
2019 Q2	127.0	91.7
2019 Q3	122.2	103.5
2019 Q4	124.8	105.2
2020 Q1	116.2	98.6
2020 Q2	114.0	105.3
2020 Q3	112.3	97.6
2020 Q4	108.0	104.4
2021 Q1	99.5	96.7
2021 Q2	109.0	98.0

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-4
Granular PTFE: Indexed subject U.S. producer prices, by quarter



Source: Compiled from data submitted in response to Commission questionnaires.

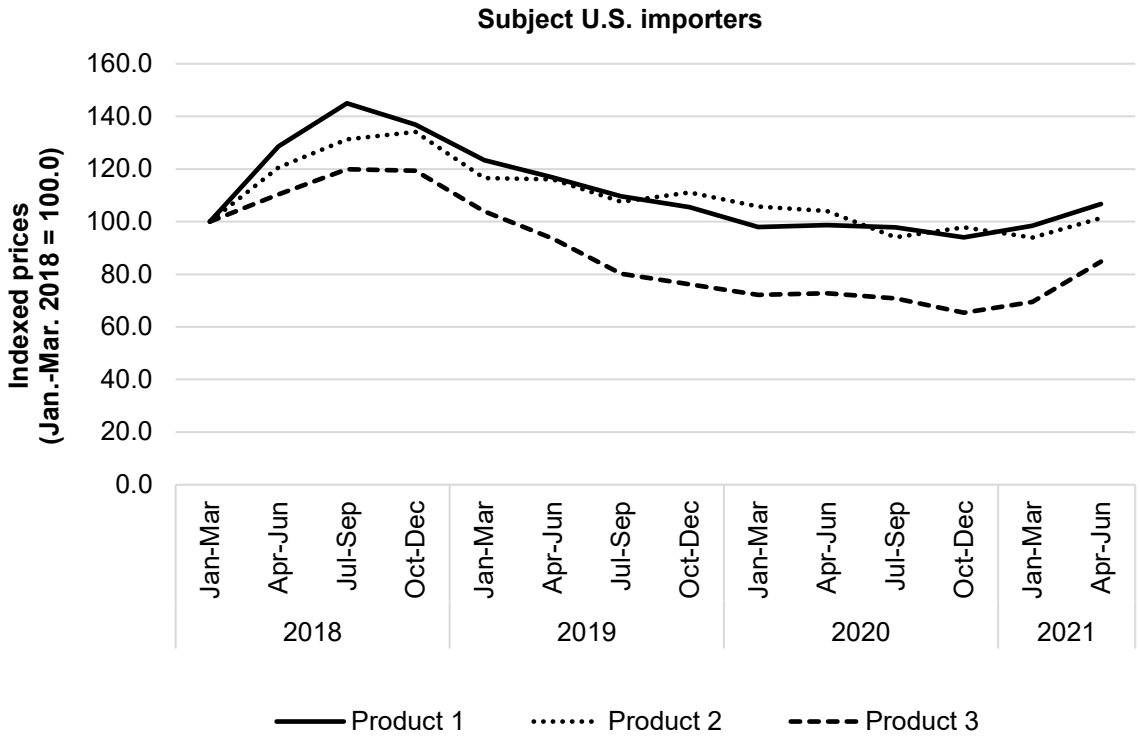
Table V-8
Granular PTFE: Indexed U.S. producer prices

Indexed prices in percent

Period	Product 1	Product 2	Product 3
2018 Q1	100.0	100.0	100.0
2018 Q2	128.6	120.6	110.3
2018 Q3	145.0	131.2	119.9
2018 Q4	136.9	134.1	119.3
2019 Q1	123.4	116.5	103.8
2019 Q2	116.8	116.1	93.6
2019 Q3	109.6	107.6	80.2
2019 Q4	105.5	111.1	76.1
2020 Q1	97.9	105.7	72.1
2020 Q2	98.7	104.0	72.8
2020 Q3	97.9	94.1	70.8
2020 Q4	94.0	97.8	65.4
2021 Q1	98.4	93.9	69.4
2021 Q2	106.7	101.3	84.8

Source: Compiled from data submitted in response to Commission questionnaires.

Figure V-5
Granular PTFE: Indexed subject U.S. importer prices, by quarter



Source: Compiled from data submitted in response to Commission questionnaires.

Price comparisons

As shown in table V-9, prices for product imported from India and Russia were below those for U.S.-produced product in all comparisons (*** dry pounds); margins of underselling ranged from 13.3 to 60.0 percent. The average margin of underselling was slightly lower for products from India than Russia, at *** and *** percent, respectively, for an average of *** percent for products 1 and products 2.

Table V-9
Granular PTFE: Instances of underselling and the range and average of margins, by product

Quantity in dry pounds; margin in percent

Item	Type	Number of quarters	Quantity	Average margin	Minimum margin	Maximum margin
Product 1	Underselling	***	***	***	***	***
Product 2	Underselling	***	***	***	***	***
Product 3	Underselling	***	***	***	***	***
Total, underselling	Underselling	56	***	42.2	13.3	60.0
India	Underselling	***	***	***	***	***
Russia	Underselling	***	***	***	***	***
Total, underselling	Underselling	56	***	42.2	13.3	60.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: These data include only quarters in which there is a comparison between the U.S. and subject product. There were no instances of overselling.

Lost sales and lost revenue

In the preliminary phase of the investigations, the Commission requested that U.S. producers of granular PTFE report purchasers with which they experienced instances of lost sales or revenue due to competition from imports of granular PTFE from India and Russia during January 2017 to September 2020. One U.S. producer (***) submitted lost sales and lost revenue allegations, identifying nine firms with which it lost sales or revenue (all allegations consisting of both types of allegations).

In the final phase of the investigations, both responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and both reported that they had lost sales.

Staff contacted 60 purchasers and received responses from 18 purchasers. Responding purchasers reported purchasing approximately *** dry pounds of granular PTFE during January 2018 to June 2021 (table V-10).

Of the 18 responding purchasers, five reported that, since 2018, they had purchased imported granular PTFE from India instead of U.S.-produced granular PTFE and four reported they purchased imported product from Russia instead of U.S.-produced granular PTFE. All of these purchasers reported that subject import prices were lower than U.S.-produced product, and one of these purchasers (***) reported that price was a primary reason for the decision to purchase imported product from India and Russia rather than U.S.-produced granular PTFE. Purchaser *** estimated the quantity of granular PTFE from India purchased instead of domestic product was *** dry pounds and the quantity purchased from Russia was *** dry pounds, for a total of *** dry pounds. The other four firms, ***, reported that availability of supply was the primary reason for purchasing imported product(tables V-11 and V-12).

Of the 18 responding purchasers, only one purchaser reported that U.S. producers had reduced prices in order to compete with lower-priced imports. Purchaser *** reported a *** percent price reduction relating to competing with Russian imports. No firm reported a price reduction with respect to imports from India, eight firms indicated no price reduction due to subject imports, and nine purchasers reported that they did not know of any price reduction.

Table V-10
Granular PTFE: Purchasers' reported purchases

Quantity in 1,000 dry pounds, share in percent

Firm	Domestic quantity	Subject quantity	All other quantity	Change in domestic share (2018 - 2020)	Change in subject share (2018 - 2020)
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: All other includes all other sources and unknown sources. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years. ***.

Table V-11
Granular PTFE: Purchasers' responses to purchasing subject imports instead of domestic product

Quantity in 1,000 dry pounds

Firm	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--6; No--12	Yes--6; No--0	Yes--1; No--3	***	NA

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-12
Granular PTFE: Purchasers' responses to purchasing subject imports instead of domestic product, by country

Quantity in 1,000 dry pounds

Source	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity
India	5	5	1	***
Russia	4	4	1	***
Subject sources	6	6	1	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part VI: Financial experience of U.S. producers

Background[1]

Two U.S. integrated producers, Chemours and Daikin, reported financial results and related information on their U.S. granular PTFE manufacturing operations. Four U.S. compounders, 3M, AGC, Flontech, and GFL Americas, reported financial results and related information on their U.S. granular PTFE compounding operations.[2] [3] As described in Part I of this report, U.S. integrated producers and U.S. compounders represent different operations and activity with respect to granular PTFE: U.S. integrated producers manufacture granular PTFE from primary inputs, while U.S. compounders combine finished granular PTFE with other material inputs.

With regard to changes in U.S. integrated producers' granular PTFE operations during the period, ***.[4] ***

[1] The following abbreviations may be used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

[2] All U.S. integrated producers and most U.S. compounders are part of larger, publicly traded multinational companies. The exception is U.S. compounder Flontech, which is a privately-held company. Chemours' granular PTFE operations take place within the Fluoropolymers business unit of its Fluoroproducts segment. Chemours 2019 10-K, pp. 4-5. Daikin's granular PTFE operations take place within its Chemicals segment. Daikin 2020 Annual Report, p. 8. ***. Email from ***, October 28, 2021. AGC Americas' compounding facility is ultimately part of the Chemical segment of parent company AGC. AGC FY 2020 Consolidated Financial Results, pp. 16-17. When in operation during 2018, GFL Americas' PTFE compounding facility was part of the Chemical segment of parent company GFL. GFL FY 2019 Annual Report, p. 278.

[3] *** U.S. integrated producers and U.S. compounders reported their financial results based on U.S. GAAP with annual periods reported on a calendar-year basis. Staff conducted a verification of Daikin's financial results and related information on November 15-16, 2021. Changes resulting from verification are reflected in this and other relevant sections of the staff report.

[4] *** U.S. producer questionnaire (final phase), response to II-2a. ***. *** U.S. producer questionnaire (preliminary phase), response to II-2a.

***.[5] The *** notable operational change with respect to the operations of U.S. compounders appears to be *** exit from the market in 2018.

Operations on Granular PTFE

Figure VI-1 presents U.S. integrated producers' firm-specific share of total 2020 net sales quantity. Table VI-1 and table VI-2 present income-and-loss data for U.S. integrated producers' granular PTFE operations and corresponding changes in average per pound values (AUVs), respectively. Figure VI-2 presents U.S. compounders' firm-specific share of total 2020 net sales quantity. Table VI-3 and table VI-4 present income-and-loss data for U.S. compounders' granular PTFE operations and corresponding changes in average per pound values (AUVs), respectively.[6] [7]

[5] *** U.S. producer questionnaire, response to II-2a. ***. Email from ***, February 22, 2021.

[6] The financial results of U.S. integrated producers and U.S. compounders reflect some changes in product mix during the period (see *Net sales* section), as well as the exit of a U.S. compounder. Under these circumstances, the utility of a variance analysis appears limited and is therefore not presented in this section of the report.

[7] Information regarding sufficient production related activity, including value added (total conversion costs (direct labor cost plus other factory costs) divided by total COGS), is presented in Appendix D. Selected U.S. integrated producer and U.S. compounder company-specific financial information is presented in Appendix F. Appendix F also presents the consolidated granular PTFE financial results of U.S. integrated producers and U.S. compounders. Appendix G presents the consolidated granular PTFE financial result of U.S. integrated producers and U.S. compounders excluding one compounder ***.

Figure VI-1
Granular PTFE: Share of net sales quantity of U.S. integrated producers in 2020, by firm

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-1
Granular PTFE: Results of operations of U.S. integrated producers, by item and period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
Raw material costs	Value	***	***	***	***	***
Direct labor costs	Value	***	***	***	***	***
Other factory costs	Value	***	***	***	***	***
COGS	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Estimated cash flow from operations	Value	***	***	***	***	***
Raw material costs	Ratio to NS	***	***	***	***	***
Direct labor costs	Ratio to NS	***	***	***	***	***
Other factory costs	Ratio to NS	***	***	***	***	***
COGS	Ratio to NS	***	***	***	***	***
Gross profit or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table VI-1 Continued
Granular PTFE: Results of operations of U.S. integrated producers, by item and period

Shares in percent; unit values in dollars per pound dry weight; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Raw material costs	Share	***	***	***	***	***
Direct labor costs	Share	***	***	***	***	***
Other factory costs	Share	***	***	***	***	***
COGS	Share	***	***	***	***	***
Total net sales	Unit value	***	***	***	***	***
Raw material costs	Unit value	***	***	***	***	***
Direct labor costs	Unit value	***	***	***	***	***
Other factory costs	Unit value	***	***	***	***	***
Cost of goods sold	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Ratios represent the ratio to net sales value and shares represent the share of COGS.

Table VI-2
Granular PTFE: Changes in AUVs of U.S. integrated producers between comparison periods

Changes in percent

Item	2018-20	2018-19	2019-20	Jan-Jun 2020-21
Total net sales	***	***	***	***
Raw material costs	***	***	***	***
Direct labor costs	***	***	***	***
Other factory costs	***	***	***	***
COGS	***	***	***	***

Table continued.

Table VI-2 Continued
Granular PTFE: Changes in AUVs of U.S. integrated producers between comparison periods

Changes in dollars per pound dry weight

Item	2018-20	2018-19	2019-20	Jan-Jun 2020-21
Total net sales	***	***	***	***
Raw material costs	***	***	***	***
Direct labor costs	***	***	***	***
Other factory costs	***	***	***	***
COGS	***	***	***	***
Gross profit or (loss)	***	***	***	***
SG&A expense	***	***	***	***
Operating income or (loss)	***	***	***	***
Net income or (loss)	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure VI-2
Granular PTFE: Share of net sales quantity of U.S. compounders in 2020, by firm

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-3
Granular PTFE: Results of operations of U.S. compounders, by item and period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
Raw material costs	Value	***	***	***	***	***
Direct labor costs	Value	***	***	***	***	***
Other factory costs	Value	***	***	***	***	***
COGS	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Estimated cash flow from operations	Value	***	***	***	***	***
Raw material costs	Ratio to NS	***	***	***	***	***
Direct labor costs	Ratio to NS	***	***	***	***	***
Other factory costs	Ratio to NS	***	***	***	***	***
COGS	Ratio to NS	***	***	***	***	***
Gross profit or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table VI-3 Continued
Granular PTFE: Results of operations of U.S. compounders, by item and period

Shares in percent; unit values in dollars per pound dry weight; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Raw material costs	Share	***	***	***	***	***
Direct labor costs	Share	***	***	***	***	***
Other factory costs	Share	***	***	***	***	***
COGS	Share	***	***	***	***	***
Total net sales	Unit value	***	***	***	***	***
Raw material costs	Unit value	***	***	***	***	***
Direct labor costs	Unit value	***	***	***	***	***
Other factory costs	Unit value	***	***	***	***	***
Cost of goods sold	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Ratios represent the ratio to net sales value and shares represent the share of COGS.

Table VI-4
Granular PTFE: Changes in AUVs of U.S. compounders between comparison periods

Changes in percent

Item	2018-20	2018-19	2019-20	Jan-Jun 2020-21
Total net sales	***	***	***	***
Raw material costs	***	***	***	***
Direct labor costs	***	***	***	***
Other factory costs	***	***	***	***
COGS	***	***	***	***

Table continued.

Table VI-4 Continued
Granular PTFE: Changes in AUVs of U.S. compounders between comparison periods

Changes in dollars per pound dry weight

Item	2018-20	2018-19	2019-20	Jan-Jun 2020-21
Total net sales	***	***	***	***
Raw material costs	***	***	***	***
Direct labor costs	***	***	***	***
Other factory costs	***	***	***	***
COGS	***	***	***	***
Gross profit or (loss)	***	***	***	***
SG&A expenses	***	***	***	***
Operating income or (loss)	***	***	***	***
Net income or (loss)	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Net sales

The majority of U.S. integrated producers' granular PTFE sales reflects commercial sales (*** percent of this category's total sales value) with a relatively small amount of internal consumption also reported (*** percent).[8] Similarly, U.S. compounders reported primarily commercial sales (*** percent of this category's total sales value) with a relatively small amount of transfer sales to related firms also reported (*** percent).[9] Given the predominance of commercial sales, a single revenue line item is presented in the U.S. integrated producer and U.S. compounder tables above.

While present to some degree, U.S. integrated producers varied in terms of whether product mix was present and impacted reported sales: *** reported that it *** sells a *** type of granular PTFE,[10] while *** reported a somewhat broader subset of

[8] ***. Submission from ***, December 17, 2021. ***. *** U.S. producer questionnaire, response to II-8 (note 2).

[9] ***. Email from ***, October 27, 2021.

[10] ***. Email from ***, November 1, 2021.

products.[11] U.S. compounders were also not uniform in terms of whether product mix was a factor that impacted reported sales value.[12]

Quantity

Directionally, *** reported declining sales quantities during the full-year period followed by higher sales quantities in January-June 2021 compared to January-June 2020. ***, the *** of the two integrated U.S. producers, reported the *** during the full-year period (*** percent in 2019 and *** percent in 2020), as well as the *** between the interim periods (*** percent). As described by ***, this pattern reflects ***.[13]

*** total sales quantity declined *** percent in 2019 and *** percent in 2020 and was *** percent higher in January-June 2021 compared to January-June 2020. With

[11] ***. Submission from ***, October 29, 2021.
[12] ***. Email from ***, October 27, 2021. ***. Email from ***, November 1, 2021.
[13] ***. Email from ***, November 1, 2021.

regard to this pattern, *** first noted that its initial 2018 sales volume reflected ***. According to ***, the decline in its 2019 sales quantity reflects several factors: the decision to ***. *** indicated that the further decline in sales quantity in 2020 reflects *** with the subsequent increase in sales quantity in January-June 2021 compared to January-June 2020 reflecting ***.[14]

Like the U.S. integrated producers, U.S. compounders reported declining total sales quantities during the full-year period followed by higher total sales quantities in January-June 2021 compared to January-June 2020. Similar to the descriptions provided by U.S integrated producers, U.S. compounders generally indicated that COVID-19 had a notable effect on the level/pattern of sales.[15] In 2019 and 2020, *** and ***, respectively, reported the largest full-year percentage declines in sales quantity, while *** reported the largest percentage increase in sales quantity in January-June 2021 compared to January-June 2020. As noted previously, *** exited the market in 2018 and reported no sales after that year.

Value

U.S. integrated producers' average per pound sales value increased to its highest level of the period in 2019, declined in 2020, and was lower in January-June 2021 compared to January-June 2020. While magnitudes varied, *** reported the *** directional pattern of higher average sales value in 2019 followed by declines in 2020 and between the interim periods, *** percentage changes being somewhat larger compared

[14] Submission from ***, October 29, 2021.

[15] ***. Email from ***, October 31, 2021. *** provided similar description regarding the impact of COVID-19 on the pattern of their sales. Email from ***, October 27, 2021. Email from ***, November 1, 2021.

to ***.[16] [17] While in a ***, *** average sales values were also somewhat *** than *** throughout the period (see table F-2).

The pattern of U.S. compounders' average sales value (increasing throughout the full-year period and lower in January-June 2021 compared to January-June 2020) diverged somewhat from the pattern reported by U.S. integrated producers.[18] On a company-specific basis U.S. compounders also reported a mixed directional pattern: *** reporting increasing average sales values throughout the period, *** reporting an overall decline and increase, respectively. Among the U.S. compounders with operations throughout the period, *** reported the *** company-specific average sales value and *** reported the highest.

Cost of goods sold and gross profit or loss

Raw materials

For U.S. integrated producers, raw material cost is the second largest component of COGS, ranging from *** percent of total COGS (2019) to *** percent (January-June 2021).

[16] ***. Email from *** to USITC staff, November 1, 2021. Between the interim periods *** reported that the further decline in its average sales value reflects ***. Ibid.

[17] ***. Submission from ***, October 29, 2021.

[18] In addition to the increase in *** average sales value in 2019, the higher overall average sales value of U.S. compounders in 2019 reflects the ***.

In general, U.S. integrated producers' company-specific raw material inputs and corresponding cost shares reflect differences in the level of input integration: Chemours ***,[19] while Daikin purchases HF.[20] As a share of 2020 raw material cost, integrated U.S. producers reported the following inputs: Chemours ***;[21] Daikin ***.[22] [23] [24]

While remaining within a relatively narrow range throughout the period, U.S. integrated producers' average per pound raw material cost increased in 2019, declined in 2020, and was lower in January-June 2021 compared to January-June 2020. During the full-year period, Chemours and Daikin reported the *** directional pattern of *** (2019) and *** (2020) average raw material cost but *** between the interim periods:

[19] ***. Email from ***, February 22, 2021. ***.

[20] Conference transcript, p. 95, p. 99 (Rubin).

[21] *** U.S. producer questionnaire, responses to III-9c and III-19.

[22] *** U.S. producer questionnaire, response to III-9c. Email from ***, November 1, 2021. ***. Petitioner's postconference brief, Answers to Staff Questions, pp. 19-20. ***. Verification report, p. 3.

[23] ***. *** U.S. producer questionnaire, response to III-7. Email from ***, November 1, 2021.

[24] Since Chemours and Daikin both indicated that raw material costs include an overhead component (see footnotes 25 and 26) and the above-referenced company-specific input cost shares sum to 100 percent, company-specific input cost shares can be interpreted to refer only to relevant material inputs.

Chemours' average raw material cost *** in January-June 2021 compared to January-June 2020; [25] while Daikin's was ***.[26]

As indicated in footnotes 25 and 26, an important factor to keep in mind when considering the pattern of U.S. integrated producers' reported raw material costs is that it reflects both the variable costs associated with upstream inputs, as well as overhead costs associated with conversion into intermediate inputs.[27] With regard to the underlying variable components of its primary raw material cost (***), Daikin stated ***.[28]

For U.S. compounders raw material cost is the largest component of COGS, ranging from *** percent of total COGS (2020) to *** percent (2018). In 2020, granular PTFE (all sources) accounted for the majority of U.S. compounders' raw material costs: *** (*** percent);

[25] Chemours' average per pound raw material cost *** percent in 2019, *** percent in 2020, and was *** percent *** in January-June 2021 compared to January-June 2020. With regard to the 2019 ***, Chemours stated ***. Email from ***, February 22, 2021. Chemours reported that the *** in average raw material cost in 2020 and between the interim periods reflects ***. Submission from ***, October 29, 2021.

[26] Daikin's average per pound raw material cost *** percent in 2019, *** percent in 2020, and was *** percent *** in January-June 2021 compared to January-June 2020. As described by Daikin, ***. Email from ***, February 22, 2021. ***. Verification report, p. 5.

[27] Conference transcript, p. 77 (Segars). With regard to Daikin's operations, relevant byproducts are limited to hydrochloric acid, which is generated during the production of R-22. Associated byproduct revenue is treated as an offset to reported raw material cost. Conference transcript, p. 99 (Rubin). The granular PTFE production process itself does not generate a byproduct. Conference transcript, p. 84 (Rubin).

[28] Petitioner's postconference brief, Answers to Staff Questions, p. 19.

*** (*** percent); and *** (*** percent).[29] *** identified its other material inputs, accounting for *** percent of 2020 raw material costs, as primarily ***. *** identified its other material inputs, accounting for *** percent of 2020 raw material costs as ***. *** identified its other material inputs, accounting for *** percent of 2020 raw material costs as ***.[30]

Like U.S. integrated producers and while also fluctuating somewhat, U.S. compounders' average per pound raw material cost remained within a relatively narrow range throughout the period: increasing on an overall basis in 2019, declining in 2020, and higher in January-June 2021 compared to January-June 2020. In 2019, *** U.S. compounders reported *** average raw material costs, the *** year that U.S. compounders were *** in terms of directional pattern, after which company-specific directional patterns were mixed.[31]

Direct labor and other factory costs

U.S. integrated producers' direct labor cost, the smallest component of COGS, ranged from *** percent of total COGS (January-June 2021) to *** percent (2018). While Daikin indicated that direct labor cost is essentially a fixed cost within the relevant range of production, direct labor cost does reportedly increase in conjunction with higher levels of production.[32] On a company-specific basis, Chemours and Daikin reported the *** directional pattern of *** average per pound direct labor cost *** in 2019 and then ***: Chemours reporting *** average direct labor cost in 2020 and *** average direct labor cost in January-June 2021 compared to January-June 2020; Daikin reporting

[29] As a share of 2020 raw material costs, domestically-produced granular PTFE accounted for *** percent (***), *** percent (***), and *** percent (***); granular PTFE produced in subject countries (India and/or Russia) accounted for *** percent (***), *** percent (***), and *** percent (***); granular PTFE produced in nonsubject countries accounted for *** percent (***), *** percent (***), and *** percent (***). *** U.S. producer questionnaires, responses to VI-12c. Email from ***, November 4, 2021.

[30] Ibid.

[31] ***. Email from ***, October 27, 2021.

[32] Conference transcript, p. 78 (Segars, Meisner). Daikin confirmed that the direct labor and other factory costs reported are specific to its granular PTFE operations. Conference transcript, p. 77 (Segars).

*** average direct labor cost in 2020 and *** average direct labor cost in January-June 2021 compared to January-June 2020.

The largest component of U.S. integrated producers' COGS, other factory costs, ranged from *** percent of total COGS (2018) to *** percent (2020). The relatively large share of other factory costs is generally consistent with Daikin's description of granular PTFE manufacturing as a capital intensive process, reflecting a high degree of fixed costs.[33] On a company-specific basis, *** percentage changes in average per pound other factory costs were *** and generally consistent with the company's description of fixed cost absorption in conjunction with changes in granular PTFE production. Similar to the pattern of average direct labor cost, Chemours and Daikin *** reported *** average other factory costs in 2019 and then diverged.[34] [35]

Ranging from *** percent of COGS (2018) to *** percent (January-June 2021), U.S. compounders reported a similar share of direct labor cost to total COGS as U.S. integrated producers but a smaller share of other factory costs (*** percent (2018) to *** percent

[33] Hearing transcript, pp. 28-29 (Segars). Hearing transcript, pp. 42-43 (Pratt). ***. Conference transcript, p. 26 (Segars).

[34] Conference transcript, p. 27 (Segars). Daikin's average per pound other factory costs *** percent and *** percent in 2019 and 2020, respectively, and was *** percent *** in January-June 2021 compared to January-June 2020. ***. Email from ***, November 1, 2021.

[35] Chemours' average per pound other factory costs *** percent in 2019, *** percent in 2020, and was *** percent *** in January-June 2021 compared to January-June 2020. ***. ***. Email from ***, February 22, 2021. Submission from ***, October 29, 2021. With regard to its somewhat higher average other factory cost between the interim periods, ***. Ibid.

***. Email from ***, February 22, 2021.

(2020)). Like U.S. integrated producers, U.S. compounders also reported a mixed directional pattern with respect to changes in average per pound direct labor cost and average other factory costs.

Gross profit or loss

U.S. integrated producers generated an overall gross profit in 2018, which was followed by full-year gross losses of varying magnitude in 2019 and 2020. In 2019, U.S. integrated producers' transition to a gross loss reflects a decline in total sales value that exceeded the corresponding decline in total COGS. In 2020, the reduction in the level of gross loss compared to 2019 reflects a continued decline in total sales value that was exceeded by a somewhat larger decline in corresponding total COGS. U.S. integrated producers' gross loss in January-June 2021, as compared to the *** gross loss reported for January-June 2020, reflects higher total sales value, which was more than offset by higher total COGS.

On a company-specific basis, Chemours' and Daikin's gross results *** inasmuch as Chemours reported *** of varying magnitudes throughout the period,[36] while Daikin reported *** throughout the period.[37] *** companies, however, shared the *** relative directional pattern in 2019 (gross results ***), *** in 2020 (Chemours' *** and Daikin's ***), and again

[36] ***. Email from ***, February 22, 2021.

[37] Daikin reported its *** in 2018. Reflecting the return of some customers and higher prices, Daikin attributed its financial results in 2018 to the imposition of preliminary duties in the previous PTFE investigations. Conference transcript, p. 30 (Segars). ***. Email from ***, February 22, 2021.

*** relative directional pattern in January-June 2021 compared to January-June 2020 (Chemours' *** and Daikin's ***).

U.S. compounders' total gross profit remained positive throughout the period, declining during the full-year period, and higher in January-June 2021 compared to January-June 2020. Among the U.S. compounders with operations throughout the period, *** reported the *** gross profit ratios (total gross profit divided by total sales) throughout the period, while *** and *** alternated in terms of which reported the highest company-specific gross profit ratio: *** in 2018 and 2019 and *** in 2020 (interim period and full-year) and interim 2021. *** U.S. integrated producers, *** U.S. compounder reported a gross loss during the period. *** from the market in 2018 contributed modestly to U.S. compounders' pattern of decline in overall gross profit in 2019.

SG&A expenses and operating income or loss

U.S. integrated producers' overall SG&A expense ratio (total SG&A expenses divided by total sales) fluctuated during the full-year period and was marginally higher in January-June 2021 compared to January-June 2020. In 2018, when U.S. integrated producers generated the *** full-year gross profit ratio (total gross profit or loss divided by total sales) of the period, the corresponding SG&A expense ratio was ***, yielding an operating loss. In conjunction with corresponding SG&A expenses, U.S. integrated producers' total gross losses during the rest of the full-year period and in January-June 2021 by default generated operating losses.

On a company-specific basis, Chemours and Daikin reported *** for either *** (***) or *** (***) of the period. In 2018, Chemours reported its *** full-year *** of the period, reflecting its *** gross profit ratio, *** SG&A expense ratio.[38] As noted previously, Daikin reported *** throughout the period, which, inclusive of SG&A expenses, by default yielded *** of varying magnitude.[39]

[38] ***. USITC auditor notes (final).

[39] ***. Granular Polytetrafluoroethylene Resin from India and Russia, Inv. Nos. 701-TA-663-664 and 731-TA-1555-1556 (Preliminary) USITC Pub. 5174, March 2021, p. VI-13, fn. 23. In conjunction with ***, the company-specific SG&A expense ratios of Chemours and Daikin were in a *** throughout the period.

U.S. compounders' SG&A expense ratios increased during the full-year period, which, in conjunction with declining sales and contracting gross profit ratios, yielded lower total operating income in 2019 and an operating loss in 2020. In January-June 2021 compared to January-June 2020, U.S. compounders transitioned back to operating income, reflecting higher total sales and gross profit ratio, and a lower SG&A expense ratio. While Flontech reported *** operating income during the full-year period, followed by *** operating income in January-June 2021 compared to January-June 2020, it was the *** U.S. compounder that reported *** operating results throughout the period.[40] While reporting *** operating results throughout *** of the period, 3M transitioned to an *** in January-June 2021.[41] AGC reported *** operating results *** in 2018 followed by *** of varying magnitude for the rest of the period.[42] GFL Americas reported ***.

Interest expense, other expenses and income, and net income or loss

On an overall basis, U.S. integrated producers reported operating and net results that were directionally the same throughout the period: declining (or further deteriorating) in 2019, increasing on a relative basis in 2020, and lower (or further deteriorating) in January-June 2021 compared to January-June 2020. While *** reported interest expense of varying magnitudes throughout the period, *** accounted for the ***. *** U.S. integrated producer reported other expenses or other income.

[40] ***. Email from ***, November 1, 2021.
[41] ***. Email from ***, October 27, 2021.
[42] ***. Email from ***, October 31, 2021.

Directionally, U.S. compounders' operating and net results declined in 2019 and 2020 and were higher in January-June 2021 compared to January-June 2020. U.S. compounders reported other income *** in 2018 and *** interest expense or other expenses.[43] As such, U.S. compounders' operating and net results were the same for *** of the period, differing only in 2018 (by the amount of *** reported in that year).[44]

Capital expenditures and R&D expenses

Table VI-5 and table VI-6 present U.S. integrated producers' and U.S. compounders' capital expenditures and each firm's narrative description, respectively. Table VI-7 and table VI-8 present U.S. integrated producers' and U.S. compounders' R&D expenses and each firm's narrative description, respectively.

Table VI-5
Granular PTFE: Capital expenditures of U.S. integrated producers and U.S. compounders, by firm and by period

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[43] *** reported a small amount of interest expense in a single year (2019). Due to rounding convention, this amount does not appear in table VI-1.

[44] ***. *** U.S. producer questionnaire response to VI-13.

Table VI-6
Granular PTFE: Narrative descriptions of the capital expenditures of U.S. integrated producers and U.S. compounders, by firm

Firm	Narrative
Chemours (U.S. integrated producer)	***
Daikin (U.S. integrated producer)	***
3M (U.S. compounder)	***
AGC (U.S. compounder)	***
GFL Americas (U.S. compounder)	***
Flontech (U.S. compounder)	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-7
Granular PTFE: R&D expenses of U.S. integrated producers and U.S. compounders, by firm and by period

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table VI-8
Granular PTFE: Narrative descriptions of the R&D expenses of U.S. integrated producers and U.S. compounders, by firm

Firm	Narrative
Chemours (U.S. integrated producer)	***
Daikin (U.S. integrated producer)	***
3M (U.S. compounder)	***
AGC (U.S. compounder)	***
GFL Americas (U.S. compounder)	***
Flontech (U.S. compounder)	***

Source: Compiled from data submitted in response to Commission questionnaires.

Assets and return on assets

Table VI-9 and table VI-10 present data on the total assets and corresponding ROA, respectively, of U.S. integrated producers and U.S. compounders.[45]

Table VI-9
Granular PTFE: Total net assets of U.S. integrated producers and U.S. compounders, by category and by period

Value in 1,000 dollars

Firm	2018	2019	2020
U.S. integrated producers	***	***	***
U.S. compounders	***	***	***
Total assets	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

[45] ROA is calculated as operating income divided by total assets. With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of current and non-current assets, which, in many instances, are not product specific. The ability of U.S. integrated producers and U.S. compounders to assign total asset values to discrete product lines affects the meaningfulness of operating return on net assets.

Table VI-10
Granular PTFE: ROA of U.S. integrated producers and U.S. compounders, by category and by period

Ratio in percent

Firm	2018	2019	2020
U.S. integrated producers	***	***	***
U.S. compounders	***	***	***
Total ROA	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Capital and investment

The Commission requested U.S. integrated producers and U.S. compounders of granular PTFE to describe any actual or potential negative effects of imports of granular PTFE from India and Russia on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-11 presents the number of firms reporting an impact and table VI-12 provides firm-specific narrative responses.

Table VI-11
Granular PTFE: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2018, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	0
Denial or rejection of investment proposal	Investment	1
Reduction in the size of capital investments	Investment	0
Return on specific investments negatively impacted	Investment	1
Other investment effects	Investment	0
Any negative effects on investment	Investment	2
Rejection of bank loans	Growth	0
Lowering of credit rating	Growth	0
Problem related to the issue of stocks or bonds	Growth	0
Ability to service debt	Growth	0
Other growth and development effects	Growth	2
Any negative effects on growth and development	Growth	2
Anticipated negative effects of imports	Future	2

Source: Compiled from data submitted in response to Commission questionnaires.

Note: *** U.S. compounders reported *** regarding actual and anticipated negative effects of subject imports.

Table VI-12
Granular PTFE: Narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2018

Item	Firm name and accompanying narrative response
Denial or rejection of investment proposal	***
Return on specific investments negatively impacted	***
Other negative impact on growth and development	***
Other negative impact on growth and development	***
Anticipated effects of imports	***
Anticipated effects of imports	***

Source: Compiled from data submitted in response to Commission questionnaires.

Part VII: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

The industry in India

The Commission issued foreign producers' or exporters' questionnaires to seven firms believed to produce and/or export granular PTFE from India.[3] A usable response to the Commission's questionnaire was received from one firm, GFL. This firm's exports to the United States accounted for approximately *** percent of U.S. imports of granular PTFE from India in 2020.[4] According to the estimate requested of the responding producer in India, the production of granular PTFE in India reported in its questionnaire response accounts for approximately *** percent of overall production of granular PTFE in India. Table VII-1 presents information on GFL's granular PTFE operations in India.

Table VII-1
Granular PTFE: Summary data for producer GFL in India, 2020

Firm	Production (1,000 pounds dry weight)	Share of reported production (percent)	Exports to the United States (1,000 pounds dry weight)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds dry weight)	Share of firm's total shipments exported to the United States (percent)
GFL	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Changes in operations

As presented in table VII-2, the producer in India reported *** operational and organizational changes since January 1, 2018, ***.

Table VII-2
Granular PTFE: Reported changes in operations by producer GFL in India, since January 1, 2020

Item	Firm name and accompanying narrative response
Other	***

Source: Compiled from data submitted in response to Commission questionnaires.

[3] These firms were identified through a review of information submitted in the petitions and presented in third-party sources. The seven firms were: ***. ***." Email from***, October 1, 2021.

[4] Responding firms accounting for all imports of granular PTFE from India identified ***. The difference in reported exports to the United States and reported imports may be due to timing differences in shipping/Customs clearance and recordkeeping.

Operations on granular PTFE

Table VII-3 presents information on the granular PTFE operations of the responding producer and exporter in India, GFL.[5] Capacity was *** between 2018 and 2020 and is projected to be *** in 2021 and 2022,[6] while production decreased by *** percent between 2018 and 2020, but was *** percent higher in interim 2021 than in interim 2020 and is projected to increase by *** percent from 2020 to 2021.*** capacity and decreasing production resulted in a *** percentage point decrease in capacity utilization during the 2018-20 period, while *** capacity and increasing production in interim 2021 resulted in interim 2021 capacity utilization being *** percentage points higher than in interim 2020, at *** percent.

Home market shipments accounted for roughly *** of total shipments throughout the period for which data were collected. Home market shipments decreased by*** percent during 2018-20, but were *** percent higher in interim 2021 than in interim 2020, and are projected to increase by *** percent from 2020 to 2021. Export shipments accounted for roughly *** of total shipments. Export shipments decreased by *** percent during 2018-20, but were *** percent higher in interim 2021 than in interim 2020 and are projected to increase by *** percent from 2020 to 2021.[7]

Exports to the United States accounted for roughly *** of total shipments throughout the period for which data were collected. Exports to the United States decreased by *** percent during 2018-20 and were *** percent lower in interim 2021 than

[5] GFL makes about seven grades of granular PTFE. Its Infolon 600 series products include fine-cut or moulding grade granular PTFE. Its 200 series includes free-flow granular PTFE, and its 500 series includes a pre-centered product range. GFL sells primarily fine-cut granular PTFE in North America. Its moulding grade granular PTFE is sold primarily into Canada. Hearing transcript p. 148 (Bhatnagar).

[6] ***. Email from ***, November 23, 2021.

[7] ***. Email from ***, November 21, 2021.

in interim 2020, but are projected to increase by *** percent from 2020 to 2021.[8]

***.[9]

Table VII-3
Granular PTFE: Data for producer GFL in India, by period

Quantity in 1,000 pounds dry weight; ratio in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Home market shipments	***	***	***	***	***	***	***
Exports to the United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued.

[8] GFL reports that projections are based on ***. GFL's foreign producer questionnaire at II-9.
[9] GFL's foreign producer response to question II-2b.

Table VII-3 continued
Granular PTFE: Data for producer GFL in India, by period

Shares and ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity utilization ratio	***	***	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***	***	***
Internal consumption share	***	***	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***	***	***
Home market shipments share	***	***	***	***	***	***	***
Exports to the United States share	***	***	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***	***	***
Export shipments share	***	***	***	***	***	***	***
Total shipments share	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: ***. See staff correspondence with ***, March 2, 2021.

GFL is a highly integrated manufacturer that produces most of the key raw materials used to produce granular PTFE, including chloroform and R-22.[10] One of the constraints to production cited by GFL is ***.

Table VII-4 presents GFL's capacity and production of TFE used to produce granular PTFE resin and other products.[11] ***.

[10] Hearing transcript, pp. 231-232 (Bhatnagar and Nolan).

[11] ***. GFL's questionnaire response at II-5b.

Table VII-4
Upstream TFE: Capacity and production of TFE used to produce granular PTFE resin and other products by producer GFL in India, by period

Quantities in 1,000 pounds dry weight; shares and Ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Capacity	Quantity	***	***	***	***	***
Production: used for granular PTFE resin	Quantity	***	***	***	***	***
Production: used for other PTFE products	Quantity	***	***	***	***	***
Production: used for other products	Quantity	***	***	***	***	***
Production: used internally	Quantity	***	***	***	***	***
Production: sold or shipped externally	Quantity	***	***	***	***	***
Production: All uses	Quantity	***	***	***	***	***
Capacity utilization	Ratio	***	***	***	***	***
Production: used for granular PTFE resin	Share	***	***	***	***	***
Production: used for other PTFE products	Share	***	***	***	***	***
Production: used for other products	Share	***	***	***	***	***
Production: used internally	Share	***	***	***	***	***
Production: sold or shipped externally	Share	***	***	***	***	***
Production: All uses	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Alternative products

GFL did not report production of alternative products on the same equipment and machinery used to produce granular PTFE. As mentioned previously, GFL reported that ***.

Exports

According to GTA, the leading export markets for PTFE resin, a category that includes granular PTFE and out-of-scope products, from India are Germany, the United States, and Italy (table VII-5). During 2020, Germany was the top export market for PTFE from India, accounting for 27.1 percent, followed by the United States, accounting for 26.4 percent.

Table VII-5
PTFE resin: Exports from India, by period

Quantity in 1,000 pounds dry weight; Value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	7,744	8,110	6,033
Germany	Quantity	6,901	7,499	6,206
Italy	Quantity	3,714	2,448	3,065
China	Quantity	904	1,249	1,941
Turkey	Quantity	904	1,148	1,424
United Kingdom	Quantity	982	1,201	869
Brazil	Quantity	562	504	856
Japan	Quantity	735	1,018	648
Canada	Quantity	245	276	340
All other destination markets	Quantity	1,784	1,496	1,507
All destination markets	Quantity	24,474	24,950	22,890
United States	Value	33,257	36,886	24,435
Germany	Value	28,648	31,684	26,593
Italy	Value	16,709	9,132	9,613
China	Value	4,536	5,115	6,698
Turkey	Value	4,643	5,453	6,650
United Kingdom	Value	4,899	6,257	4,483
Brazil	Value	3,203	2,741	4,533
Japan	Value	3,637	5,181	3,351
Canada	Value	985	783	870
All other destination markets	Value	9,037	6,773	6,313
All destination markets	Value	109,554	110,006	93,539

Table continued.

Table VII-5 continued
PTFE resin: Exports from India, by period

Unit values in dollars per pound dry weight; Shares in percent

Destination market	Measure	2018	2019	2020
United States	Unit value	4.29	4.55	4.05
Germany	Unit value	4.15	4.22	4.28
Italy	Unit value	4.50	3.73	3.14
China	Unit value	5.02	4.09	3.45
Turkey	Unit value	5.14	4.75	4.67
United Kingdom	Unit value	4.99	5.21	5.16
Brazil	Unit value	5.70	5.44	5.29
Japan	Unit value	4.95	5.09	5.18
Canada	Unit value	4.02	2.84	2.56
All other destination markets	Unit value	5.07	4.53	4.19
All destination markets	Unit value	4.48	4.41	4.09
United States	Share of quantity	31.6	32.5	26.4
Germany	Share of quantity	28.2	30.1	27.1
Italy	Share of quantity	15.2	9.8	13.4
China	Share of quantity	3.7	5.0	8.5
Turkey	Share of quantity	3.7	4.6	6.2
United Kingdom	Share of quantity	4.0	4.8	3.8
Brazil	Share of quantity	2.3	2.0	3.7
Japan	Share of quantity	3.0	4.1	2.8
Canada	Share of quantity	1.0	1.1	1.5
All other destination markets	Share of quantity	7.3	6.0	6.6
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 3904.61 as reported by India's Ministry of Commerce in the Global Trade Atlas database, accessed November 23, 2021.

Note: United States is shown at the top, all remaining top export destinations shown in descending order of 2020 data.

The industry in Russia

The Commission issued foreign producers' or exporters' questionnaires to one firm believed to produce and/or export granular PTFE from Russia.[12] A usable response to the Commission's questionnaire was received from one firm, HaloPolymer. This firm's exports to the United States accounted for approximately *** percent of U.S. imports of granular PTFE from Russia in 2020.[13] The responding Russian producer estimates that it accounts for *** percent of overall production of granular PTFE in Russia.[14] Table VII-6 presents information on the granular PTFE operations of the responding producer and exporter in Russia.

Table VII-6
Granular PTFE: Summary data for producer HaloPolymer in Russia, 2020

Firm	Production (1,000 pounds dry weight)	Share of reported production (percent)	Exports to the United States (1,000 pounds dry weight)	Share of reported exports to the United States (percent)	Total shipments (1,000 pounds dry weight)	Share of firm's total shipments exported to the United States (percent)
HaloPolymer	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Changes in operations

HaloPolymer reported *** operational or organizational changes since January 1, 2018.

[12] These firms were identified through a review of information submitted in the petitions and presented in third-party sources.

[13] Responding firms that accounted for all U.S. imports of granular PTFE from Russia identified ***. The difference in reported exports to the United States and reported imports are likely due to timing differences in shipping/Customs clearance and record keeping. In addition, ***.

[14] HaloPolymer is one of the largest producers of granular PTFE in the world. Hearing transcript, p. 154 (Newberry).

Operations on granular PTFE

Table VII-7 presents information on the granular PTFE operations of the responding producer and exporter in Russia.[15] [16] Capacity *** increased between 2018 and 2020 by *** percent and is projected to be stable in 2021 and 2022.[17] Production decreased by *** percent from 2018 to 2019, then increased by *** percent from 2019 to 2020, for an overall *** percent increase during 2018-20, and was *** percent higher in interim 2021 than in interim 2020. Production is projected to increase by *** percent from 2020 to 2021. Capacity utilization ranged from *** percent in 2019 to *** percent in interim 2021, and is projected to be *** percent in 2021 and 2022.[18]

Home market shipments, representing roughly *** of total shipments, increased by *** percent between 2018 and 2020 and were *** percent lower in interim 2021 than in interim 2020 and are projected to decrease by *** percent from 2020 to 2021. Export shipments to the United States, representing between *** to *** percent of total shipments throughout the period for which data were collected, decreased by *** percent during 2018-19, then increased by *** percent during 2019-20, for an overall decrease of *** percent during 2018-20. Export shipments to the United States were *** percent lower in interim 2021 than in interim 2020. Export shipments to the United States are projected to decrease during 2020-21 by *** percent and again by *** percent during 2021-22. Export shipments to all other markets, representing between *** and *** percent of total shipments, increased by *** percent during 2018-20 and were *** percent higher in interim 2021 than in interim 2020, and are not projected to change during 2021-22.[19]

[15] HaloPolymer's questionnaire response covered two establishments – limited liability company HaloPolymer Kirovo-Chepetsk ("HPKC") and joint stock company HaloPolymer Perm ("HPP).

[16] HaloPolymer produces fine-cut, free-flow, and moulding-grade granular PTFE. The majority of its sales to the U.S. are moulding grade granular PTFE. Hearing transcript, pp. 155-156 (Newberry).

[17] ***. HaloPolymer's questionnaire responses at II-3c and II-3d. HaloPolymer reported facing supply constraints related to its purchases of fluorspar and technical salt in 2018 and 2019, which are needed to process granular PTFE resin. Respondents' posthearing brief, p. 47.

[18] ***. HaloPolymer's foreign producer questionnaire at II-9.

[19] HaloPolymer's other export markets include: ***.

Table VII-7
Granular PTFE: Data for producers in Russia, by period

Quantity in 1,000 pounds dry weight

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Home market shipments	***	***	***	***	***	***	***
Exports to the United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued.

Table VII-7 continued
Granular PTFE: Data for producers in Russia, by period

Shares and ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity utilization ratio	***	***	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***	***	***
Internal consumption share	***	***	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***	***	***
Home market shipments share	***	***	***	***	***	***	***
Exports to the United States share	***	***	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***	***	***
Export shipments share	***	***	***	***	***	***	***
Total shipments share	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Table VII-8 presents HaloPolymer's capacity and production of TFE used to produce granular PTFE resin and other products.[20] ***. Other products that HaloPolymer produces using TFE as an input include: ***.

[20] ***. GFL's questionnaire response at II-5b.

Table VII-8
Upstream TFE: Capacity and production of TFE used to produce granular PTFE resin and other products by producers in Russia, by period

Quantities in 1,000 pounds dry weight; shares and ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Capacity	Quantity	***	***	***	***	***
Production: used for granular PTFE resin	Quantity	***	***	***	***	***
Production: used for other PTFE products	Quantity	***	***	***	***	***
Production: used for other products	Quantity	***	***	***	***	***
Production: used internally	Quantity	***	***	***	***	***
Production: sold or shipped externally	Quantity	***	***	***	***	***
Production: All uses	Quantity	***	***	***	***	***
Capacity utilization	Ratio	***	***	***	***	***
Production: used for granular PTFE resin	Share	***	***	***	***	***
Production: used for other PTFE products	Share	***	***	***	***	***
Production: used for other products	Share	***	***	***	***	***
Production: used internally	Share	***	***	***	***	***
Production: sold or shipped externally	Share	***	***	***	***	***
Production: All uses	Share	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent

Alternative products

HaloPolymer did not report production of alternative products on the same equipment and machinery used to produce granular PTFE.

Exports

According to GTA, the leading export markets for PTFE resin, a category that includes granular PTFE and out-of-scope products, from Russia are Italy, South Korea, and the United States (table VII-9). During 2020, Italy was the top export market for PTFE from Russia, accounting for 36.7 percent, followed by South Korea, accounting for 30.8 percent and the United States accounting for 20.3 percent.

Table VII-9
PTFE resin: Exports from Russia, by period

Quantity in 1,000 pounds dry weight; Value in 1,000 dollars

Destination market	Measure	2018	2019	2020
United States	Quantity	4,354	2,112	4,031
Italy	Quantity	7,713	4,400	7,281
South Korea	Quantity	4,717	4,907	6,110
China	Quantity	430	718	757
Germany	Quantity	696	601	611
Belgium	Quantity	22	219	218
Switzerland	Quantity	216	43	205
Romania	Quantity	511	469	170
Brazil	Quantity	120	136	83
All other destination markets	Quantity	622	750	385
All destination markets	Quantity	19,401	14,354	19,851
United States	Value	19,640	6,656	9,982
Italy	Value	29,734	11,619	16,577
South Korea	Value	17,853	11,085	11,505
China	Value	1,452	1,224	1,145
Germany	Value	2,739	1,725	1,591
Belgium	Value	80	401	508
Switzerland	Value	889	114	440
Romania	Value	1,885	1,112	349
Brazil	Value	539	425	192
All other destination markets	Value	2,814	2,430	1,126
All destination markets	Value	77,624	36,791	43,414

Table continued.

Table VII-9 continued
PTFE resin: Exports from Russia, by period

Unit values in dollars per pound dry weight; Shares in percent

Destination market	Measure	2018	2019	2020
United States	Unit value	4.51	3.15	2.48
Italy	Unit value	3.85	2.64	2.28
South Korea	Unit value	3.78	2.26	1.88
China	Unit value	3.37	1.70	1.51
Germany	Unit value	3.93	2.87	2.60
Belgium	Unit value	3.64	1.83	2.33
Switzerland	Unit value	4.12	2.66	2.14
Romania	Unit value	3.69	2.37	2.05
Brazil	Unit value	4.50	3.11	2.32
All other destination markets	Unit value	4.52	3.24	2.92
All destination markets	Unit value	4.00	2.56	2.19
United States	Share of quantity	22.4	14.7	20.3
Italy	Share of quantity	39.8	30.7	36.7
South Korea	Share of quantity	24.3	34.2	30.8
China	Share of quantity	2.2	5.0	3.8
Germany	Share of quantity	3.6	4.2	3.1
Belgium	Share of quantity	0.1	1.5	1.1
Switzerland	Share of quantity	1.1	0.3	1.0
Romania	Share of quantity	2.6	3.3	0.9
Brazil	Share of quantity	0.6	1.0	0.4
All other destination markets	Share of quantity	3.2	5.2	1.9
All destination markets	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 3904.61 as reported by Customs Committee of Russia in the Global Trade Atlas database, accessed November 23, 2021.

Note: United States is shown at the top, all remaining top export destinations shown in descending order of 2020 data.

Subject countries combined

Table VII-10 presents summary data on granular PTFE operations of the reporting subject producers in the subject countries.

Table VII-10
Granular PTFE: Data on the industry in subject countries, by period

Quantity in 1,000 pounds dry weight

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity	***	***	***	***	***	***	***
Production	***	***	***	***	***	***	***
End-of-period inventories	***	***	***	***	***	***	***
Internal consumption	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Home market shipments	***	***	***	***	***	***	***
Exports to the United States	***	***	***	***	***	***	***
Exports to all other markets	***	***	***	***	***	***	***
Export shipments	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued.

Table VII-10 continued
Granular PTFE: Data on the industry in subject countries, by period

Shares and ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021	Projection 2021	Projection 2022
Capacity utilization ratio	***	***	***	***	***	***	***
Inventory ratio to production	***	***	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***	***	***
Internal consumption share	***	***	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***	***	***
Home market shipments share	***	***	***	***	***	***	***
Exports to the United States share	***	***	***	***	***	***	***
Exports to all other markets share	***	***	***	***	***	***	***
Export shipments share	***	***	***	***	***	***	***
Total shipments share	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

U.S. inventories of imported merchandise

Table VII-11 presents data on U.S. importers' reported inventories of granular PTFE. Ending inventories from subject sources decreased by *** percent during 2018-2020 and were *** percent lower in the interim 2021 than in interim 2020. The ratio of importers' inventories of granular PTFE from subject sources to U.S. shipments of imports fluctuated during 2018-20 and decreased overall from *** percent in 2018 to *** percent in 2020. Inventories from nonsubject sources fluctuated and decreased overall by *** percent between 2018 and 2020 and the ratio of importers' inventories of granular PTFE from nonsubject countries to U.S. shipments of imports decreased by *** percentage points from 2018 to 2020, when it was equivalent to *** percent of U.S. shipments of imports, and was *** percentage points lower in interim 2021 than in interim 2020.

Table VII-11
Granular PTFE: U.S. importers' inventories, by period

Quantity in 1,000 pounds dry weight; Ratios in percent

Measure	Source	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Inventories quantity	India	***	***	***	***	***
Ratio to imports	India	***	***	***	***	***
Ratio to U.S. shipments of imports	India	***	***	***	***	***
Ratio to total shipments of imports	India	***	***	***	***	***
Inventories quantity	Russia	***	***	***	***	***
Ratio to imports	Russia	***	***	***	***	***
Ratio to U.S. shipments of imports	Russia	***	***	***	***	***
Ratio to total shipments of imports	Russia	***	***	***	***	***
Inventories quantity	Subject	***	***	***	***	***
Ratio to imports	Subject	***	***	***	***	***
Ratio to U.S. shipments of imports	Subject	***	***	***	***	***
Ratio to total shipments of imports	Subject	***	***	***	***	***
Inventories quantity	Nonsubject	***	***	***	***	***
Ratio to imports	Nonsubject	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject	***	***	***	***	***
Inventories quantity	All	3,811	3,587	3,055	3,755	2,648
Ratio to imports	All	28.6	30.3	30.7	31.4	23.0
Ratio to U.S. shipments of imports	All	***	***	***	***	***
Ratio to total shipments of imports	All	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of granular PTFE from India and Russia after June 30, 2021. Their reported data is presented in table VII-12. Out of the responding importers, nine out of the twelve firms indicated that they had arranged such imports. One firm reported arranged imports only from India, another firm reported arranged imports only from Russia, two firms reported arranged imports from both Russia and other sources, and five firms reported arranged imports from other sources. Arranged imports of granular PTFE from subject sources accounted for *** percent of total arranged imports.

Table VII-12
Granular PTFE: Quantity of U.S. importers' arranged imports, by period

Quantity in 1,000 pounds dry weight

Source of arranged imports	Jul-Sep 2021	Oct-Dec 2021	Jan-Mar 2022	Apr-Jun 2022	Total
India	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Third-country trade actions

India issued antidumping duty orders on imports of PTFE from Russia in October 1999[21] and on imports of PTFE from China in July 2005.[22] In 2016, India completed its third review concerning PTFE from Russia and its second review of the orders of PTFE from China. Both sets of orders were continued with some modifications. The antidumping order for China is in force for 5 years after the publication date of July 28, 2017 (until mid-2022).[23]

[21] Government of India, Department of Commerce, "Polytetrafluoroethylene PTFE Russia," Case No. No. 241/98-DGAD, Directorate General of Anti-Dumping and Allied Duties Final Findings (March 2017), https://www.dgtr.gov.in/anti-dumping-cases/polytetrafluoroethylene-ptfe-russia, retrieved December 2, 2021.

[22] Government of India, Department of Commerce, "Polytetrafluoroethylene PTFE China PR," Case No. No.14/25/2003-DGAD,15/11/2016-DGAD, Directorate General of Anti-Dumping and Allied Duties Final Findings (June 2017), https://www.dgtr.gov.in/anti-dumping-cases/polytetrafluoroethylene-ptfe-china-pr, retrieved December 2, 2021.

[23] Government of India, Department of Commerce, "Notification, Final Findings, Case No. ADD-AC-03/2020," F. No. 07/22/2020-DGTR, January 27, 2021, https://www.dgtr.gov.in/sites/default/files/PTFE%20AC%20-%20FF%20-%20NCV.pdf.

On August 23, 2021, the Government of India, Department of Commerce published its fourth sunset review findings on imports from Russia. It concluded there was continued material injury and recommended a 5-year imposition of duties.[24] However, the Indian Ministry of Finance (Department of Revenue) revoked the antidumping order of 2016 on Russia in a notification issued on October 22, 2021.[25] Petitioner is not aware of any other antidumping or countervailing orders.[26]

Information on nonsubject countries

Global capacity for PTFE in 2018 was ***, global production was ***, and global apparent consumption was ***, shown in table VII-13.[27] Global consumption is forecast to grow at an average annual rate of *** percent from 2018–23, with growth in U.S. consumption forecast at *** percent.[28] Capacity in 2018 was *** for the United States, *** for Western Europe, *** for Japan, *** for China, and *** for the rest of the world.[29] Consumption of PTFE in 2018 was *** for the United States, *** for Western Europe, *** for Japan, and *** for China.

[24] Government of India, Department of Commerce, "Notification, Final Findings, Case No. ADD-SSR-28/2020," F. No. 07/47/2020-DGTR, August 23, 2021, https://www.dgtr.gov.in/sites/default/files/PTFE%20English%20NCV.pdf.

[25] Government of India, Ministry of Finance (Department of Revenue), "Notification No. 62/2021-Customs (ADD)," October 22, 2021, https://www.dgtr.gov.in/sites/default/files/csadd62-2021.pdf.

[26] Conference transcript, p. 48 (Meisner).

[27] IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 9, 11.

[28] IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 9, 11.

[29] IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 9, 11.

Table VII-13
PTFE resin: Global supply and demand, 2018

Capacity, production and apparent consumption in thousands of metric tons; growth rate in percent

Country or region	Annual capacity	Production	Apparent consumption	Average annual consumption growth rate 2018-23
United States	***	***	***	***
Western Europe	***	***	***	***
China	***	***	***	***
Japan	***	***	***	***
India	***	***	***	***
South Korea	***	***	***	***
Taiwan	***	***	***	***
All other	***	***	***	***
Global total	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 9, 11.

Note: Includes all forms of PTFE resin (granular, dispersion, fine powder).

Note: ***. IHS Markit, Chemical Economics Handbook: Fluoropolymers, April 2019, pp. 155-156.

The major world producers of PTFE resin and their plant capacities are shown in table VII-14. Detailed information on Western European producers of PTFE resin is shown in table VII-15. Table VII-16 shows the Western European supply and demand for 2013–18 and 2023 (forecast). Western European consumption of PTFE by grade in 2015, 2018, and 2023 (forecast) is listed in table VII-17. Japanese supply and demand are listed in table VII-18, and consumption by PTFE form is listed in table VII-19. Global exports by exporting country for HTS subheading 3904.61 for 2018–20 are presented in table VII-20. As GTA only provides data to the six-digit HTS level that covers PTFE, the data presented may include certain out-of-scope merchandise, such as micropowder, fine powder, and dispersion PTFE resin.

Table VII-14
PTFE resin: Major world producers, all forms of PTFE and plant capacity, by company, 2019

Capacity in thousands of metric tons

Company	Plant location	Capacity
***	***	***
***	***	***
***	All locations, total	***
***	***	***
***	***	***
***	***	***
***	***	***
***	All locations, total	***
***	***	***
***	***	***
***	***	***
***	***	***
***	All locations, total	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***
***	All locations, total	***
***	***	***
Total Major Producers	All locations, total for all major producers	***

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 15-18.

Note: ***.

Note: ***.

Note: ***. The*** metric tons for PTFE only were taken from 2016 data from IHS Markit, C*hemical Economics Handbook: Fluoropolymers*, IHS, August 2016, pp. 10-12.

Table VII-15
PTFE resin: Western European producers of PTFE resin and their capacities, 2019

Capacity in thousands of metric tons

Company	Plant location	Capacity	Form of PTFE	Trade name/remarks
Dyneon GmbH	Gendorf Burgkirchen, Germany	***	***	***
Solvay Solexis Polymers S.p.A.	Spinetta-Marengo, Italy	***	***	***
Chemours Netherlands B.V.	Dordrect, Netherlands	***	***	***
Chemours Netherlands B.V.	Dordrect, Netherlands	***	***	n/a
AGC Chemicals Europe, Ltd.	Blackpool, United Kingdom	***	***	***

Note: Includes all forms of PTFE resin (granular, dispersion, fine powder).

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, pp. 80-81.

Table VII-16
PTFE resin: Western European supply and demand, 2013-18 and forecast to 2023

Quantity in thousands of metric tons, rate in percent

Item	2013	2014	2015	2016	2017	2018	2023	Average annual growth rate (2013-18)	Average annual growth rate (2018-23)
Production	***	***	***	***	***	***	***	***	***
Imports	***	***	***	***	***	***	***	***	***
Exports	***	***	***	***	***	***	***	***	***
Apparent consumption	***	***	***	***	***	***	***	***	***

Note: All data are for virgin, straight, and uncompounded polymers, excluding any recycled material.

Note: Includes all forms of PTFE resin (granular, dispersion, fine powder).

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, p. 86.

Table VII-17
PTFE resin: Western European consumption by grade of PTFE, 2015, 2018 and 2023 (forecast)

In thousands of metric tons

Item	2015	2018	2023 forecast
Granular resin	***	***	***
Fine powders	***	***	***
Aqueous dispersions	***	***	***
Other	***	***	***
Total	***	***	***

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, p. 90.

Table VII-18
PTFE resin: Japanese supply/demand, 2013—18

In thousands of metric tons

Item	2013	2014	2015	2016	2017	2018
Annual capacity	***	***	***	***	***	***
Production	***	***	***	***	***	***
Imports	***	***	***	***	***	***
Exports	***	***	***	***	***	***
Apparent consumption	***	***	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, p. 143.

Note: Capacities of multipurpose plants are included. Includes all forms of PTFE resin.

Note: Imports and exports are reported under HS code: 3904.61.

Note: Data are rounded.

Table VII-19
PTFE resin: Japanese consumption of PTFE by form

In thousands of metric tons

Item	2013	2014	2015	2016	2017	2018	2023 forecast
Granular nonfilled	***	***	***	***	***	***	***
Granular filled	***	***	***	***	***	***	***
Fine powder	***	***	***	***	***	***	***
Aqueous dispersions	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***

Source: IHS Markit, *Chemical Economics Handbook*: *Fluoropolymers*, April 2019, p. 145.

Note: The category of "Other" includes micropowder and reclaimed/recycled resin.

Table VII-20
PTFE resin: Global exports by reporting country and period

Quantity in 1,000 pounds dry weight, Value in 1,000 dollars

Exporting country	Measure	2018	2019	2020
United States	Quantity	23,052	31,244	19,607
China	Quantity	50,504	47,477	75,439
India	Quantity	24,474	24,950	22,890
Germany	Quantity	25,591	22,116	19,932
Russia	Quantity	19,401	14,354	19,851
Italy	Quantity	24,897	22,045	18,455
Netherlands	Quantity	19,227	16,562	13,507
Japan	Quantity	10,106	10,812	9,388
Belgium	Quantity	11,608	10,545	8,316
United Kingdom	Quantity	6,851	6,140	5,359
Malaysia	Quantity	53	1,510	2,004
South Korea	Quantity	1,860	1,922	1,995
All other exporters	Quantity	13,551	39,793	6,380
All reporting exporters	Quantity	231,175	249,472	223,123
United States	Value	140,309	147,097	110,884
China	Value	226,802	184,104	204,148
India	Value	109,554	110,006	93,539
Germany	Value	151,132	137,797	126,962
Russia	Value	77,624	36,791	43,414
Italy	Value	134,904	108,548	91,465
Netherlands	Value	118,659	103,481	83,925
Japan	Value	74,520	76,743	68,812
Belgium	Value	62,494	55,104	48,870
United Kingdom	Value	58,953	55,683	48,841
Malaysia	Value	359	2,545	2,311
South Korea	Value	8,961	6,904	6,179
All other exporters	Value	47,173	57,579	35,239
All reporting exporters	Value	1,211,444	1,082,382	964,590

Table continued.

Table VII-20 continued
PTFE resin: Global exports by reporting country and period

Unit values in dollars per pound dry weight, shares in percent

Exporting country	Measure	2018	2019	2020
United States	Unit value	6.09	4.71	5.66
China	Unit value	4.49	3.88	2.71
India	Unit value	4.48	4.41	4.09
Germany	Unit value	5.91	6.23	6.37
Russia	Unit value	4.00	2.56	2.19
Italy	Unit value	5.42	4.92	4.96
Netherlands	Unit value	6.17	6.25	6.21
Japan	Unit value	7.37	7.10	7.33
Belgium	Unit value	5.38	5.23	5.88
United Kingdom	Unit value	8.61	9.07	9.11
Malaysia	Unit value	6.80	1.69	1.15
South Korea	Unit value	4.82	3.59	3.10
All other exporters	Unit value	3.48	1.45	5.52
All reporting exporters	Unit value	5.24	4.34	4.32
United States	Share of quantity	10.0	12.5	8.8
China	Share of quantity	21.8	19.0	33.8
India	Share of quantity	10.6	10.0	10.3
Germany	Share of quantity	11.1	8.9	8.9
Russia	Share of quantity	8.4	5.8	8.9
Italy	Share of quantity	10.8	8.8	8.3
Netherlands	Share of quantity	8.3	6.6	6.1
Japan	Share of quantity	4.4	4.3	4.2
Belgium	Share of quantity	5.0	4.2	3.7
United Kingdom	Share of quantity	3.0	2.5	2.4
Malaysia	Share of quantity	0.0	0.6	0.9
South Korea	Share of quantity	0.8	0.8	0.9
All other exporters	Share of quantity	5.9	16.0	2.9
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 3904.61 as reported by various national statistical authorities in the Global Trade Atlas database, accessed November 23, 2021.

Note: Shares and ratios shown as "0.0" represent values greater than zero but less than "0.05" percent. The United States is shown at the top followed by the countries under investigation, all remaining top exporting countries are ranked in descending order of 2020 data.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, Federal Register notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
86 FR 7876, January 27, 2021	*Granular Polytetrafluoroethylene (PTFE) Resin From India and Russia; Institution of Anti-Dumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-02/pdf/2021-02108.pdf
86 FR 10931, February 16, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-23/pdf/2021-03622.pdf
86 FR 10926, February 23, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-02-23/pdf/2021-03621.pdf
86 FR 14957, 3/19/2021	*Granular Polytetrafluoroethylene Resin From India and Russia; Determinations*	https://www.govinfo.gov/content/pkg/FR-2021-03-19/pdf/2021-05680.pdf
86 FR 14871, March 19, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-03-19/pdf/2021-05739.pdf

Citation	Title	Link
86 FR 31276, June 11, 2021	*Granular Polytetrafluoroethylene Resin From India and the Russian Federation: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-06-11/pdf/2021-12316.pdf
86 FR 35476, July 6, 2021	*Granular Polytetrafluoroethylene Resin From the Russian Federation: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-07-06/pdf/2021-14328.pdf
86 FR 35479, July 6, 2021	*Granular Polytetrafluoroethylene Resin From India: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination, and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2021-07-06/pdf/2021-14318.pdf
86 FR 49297, September 2, 2021	*Granular Polytetrafluoroethylene Resin From the Russian Federation: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2021-09-02/pdf/2021-18970.pdf

Citation	Title	Link
86 FR 49299, September 2, 2021	*Granular Polytetrafluoroethylene Resin From India: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Preliminary Affirmative Determination of Critical Circumstances, Postponement of Final Determination, and Extension of Provisional Measures*	https://www.govinfo.gov/content/pkg/FR-2021-09-02/pdf/2021-18969.pdf
86 FR 51378, September 2, 2021	*Granular Polytetrafluoroethylene (PTFE) Resin From India and Russia; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2021-09-15/pdf/2021-19897.pdf
87 FR 3764 January 25, 2022	*Granular Polytetrafluoroethylene Resin From the Russian Federation: Final Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2022-01-25/pdf/2022-01337.pdf
87 FR 3765 January 25, 2022	*Granular Polytetrafluoroethylene Resin From India: Final Affirmative Countervailing Duty Determination and Final Affirmative Critical Circumstances Determination*	https://www.govinfo.gov/content/pkg/FR-2022-01-25/pdf/2022-01338.pdf

87 FR 3772 January 25, 2022	*Granular Polytetrafluoroethylene Resin From India: Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*	https://www.govinfo.gov/content/pkg/FR-2022-01-25/pdf/2022-01339.pdf
87 FR 3774 January 25, 2022	*Granular Polytetrafluoroethylene Resin From the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2022-01-25/pdf/2022-01335.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared in the United States International Trade Commission's hearing via videoconference:

Subject: Granular Polytetrafluoroethylene ("PTFE") Resin from India and Russia

Inv. Nos.: 701-TA-663 and 731-TA-1555-1557 (Final)

Date and Time: January 19, 2022 - 9:30 a.m.

CONGRESSIONAL APPEARANCE:

The Honorable Mo Brooks, U.S. Representative, 5th District, Alabama

OPENING REMARKS:

Petitioners (**Luke Meisner**, Schagrin Associates)
Respondents (**Sydney H. Mintzer**, Mayer Brown LLP)

In Support of the Imposition of Antidumping and Countervailing Duty Orders:

Schagrin Associates
Cassidy Levy Kent (USA) LLP
Washington, DC
on behalf of

Daikin America, Inc.
The Chemours Company FC LLC

Greg Rubin, Vice President of Sales and Commercial Activity, Daikin America, Inc.

Scott Segars, Plant Controller, Daikin America, Inc.

Michael Cagle, Manager of PTFE Production Operations, Daikin America, Inc.

David Jacob, Application Scientist, Daikin America, Inc.

In Support of the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Lensey Smith, Applications Technology Manager for Polymer Division, Daikin America, Inc.

Jon Heckman, Sales Manager-PTFE, Daikin America, Inc.

Greg Folli, Chief Financial Officer, Vice President of Finance and Accounting, Department, Daikin America, Inc.

Mallory Peragine, Product Manager- Fluoropolymers: PTFE, Daikin America Inc.

Graham Pratt, Industry 4.0 Manufacturing Leader, The Chemours Company FC LLC

Luke Meisner)
Elizabeth Drake)
) – OF COUNSEL
Benjamin Bay)
Mary Jane Alves)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders:

Mayer Brown LLP
Washington, DC
on behalf of

HaloPolymer Kirovo-Chepetsk, LLC
HaloPolymer Perm, OJSC
HaloPolymer Trading, Inc.

Maria Newbury, Ph.D., President, HaloPolymer Trading, Inc.

Andrea Arlati, Vice President of Operations, Industrial Plastics & Machine, Inc.

Sydney H. Mintzer)
) – OF COUNSEL
Ellen Aldin)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Arent Fox LLP
Washington, DC
on behalf of

Gujarat Fluorochemicals Limited ("GFCL")

Puneet Bhatnagar, Business Head, GFL Americas LLC

Jim Dougan, Partner, Ion Economics LLC

Susannah Perkins, Economist, Ion Economics LLC

Matthew M. Nolan)
Jessica R. DiPietro) – OF COUNSEL
Yun Gao)

REBUTTAL/CLOSING REMARKS:

Petitioners
(**Elizabeth Drake**, Schagrin Associates and **Mary Jane Alves**, Cassidy Levy Kent (USA) LLP)

Respondents (**Matthew M. Nolan**, Arent Fox LLP)

-END-

APPENDIX C

SUMMARY DATA

All producers and compounders

Table C-1
Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, by period

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. consumption value:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1):									
Fully domestic value	***	***	***	***	***	▼***	▼***	▼***	▲***
Value added to imports	***	***	***	***	***	▲***	▲***	▲***	▲***
Total value	***	***	***	***	***	▼***	▼***	▲***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▼***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Subject sources:									
Quantity	6,814	7,223	6,551	3,892	***	▼(3.9)	▲6.0	▼(9.3)	▼***
Value	33,625	32,925	25,197	15,227	***	▼(25.1)	▼(2.1)	▼(23.5)	▼***
Unit value	$4.93	$4.56	$3.85	$3.91	***	▼(22.1)	▼(7.6)	▼(15.6)	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Nonsubject sources:									
Quantity	5,375	4,415	3,418	1,643	***	▼(36.4)	▼(17.9)	▼(22.6)	▲***
Value	39,069	32,880	24,918	12,736	***	▼(36.2)	▼(15.8)	▼(24.2)	▲***
Unit value	$7.27	$7.45	$7.29	$7.75	***	▲0.3	▲2.5	▼(2.1)	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
All import sources:									
Quantity	12,189	11,638	9,970	5,535	***	▼(18.2)	▼(4.5)	▼(14.3)	▲***
Value	72,695	65,805	50,115	27,963	***	▼(31.1)	▼(9.5)	▼(23.8)	▲***
Unit value	$5.96	$5.65	$5.03	$5.05	***	▼(15.7)	▼(5.2)	▼(11.1)	▲***
Ending inventory quantity	3,811	3,587	3,055	3,755	2,648	▼(19.9)	▼(5.9)	▼(14.8)	▼(29.5)

Table continued.

Table C-1 Continued
Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, by period

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. integrated producers' and compounders':									
Producers: Average capacity quantity	***	***	***	***	***	▲***	▲***	▼***	***
Producers: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Compounders: Average capacity quantity	13,405	10,030	10,030	5,015	5,015	▼(25.2)	▼(25.2)	---	---
Compounders: Production quantity	4,772	3,685	2,228	1,275	1,621	▼(53.3)	▼(22.8)	▼(39.5)	▲27.1
Compounders: Capacity utilization (fn1)	35.6	36.7	22.2	25.4	32.3	▼(13.4)	▲1.1	▼(14.5)	▲6.9
U.S. shipments (fn2):									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value:									
Fully domestic value	***	***	***	***	***	▼***	▼***	▼***	▲***
Value added to imports	***	***	***	***	***	▼***	▼***	▼***	▲***
Total value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers: Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers: Inv./total shipments (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Inv./total shipments (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
Production workers	***	***	***	***	***	▼***	▼***	▼***	▲***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	▲***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▲***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▲***
Producers: Productivity	***	***	***	***	***	▼***	▼***	▲***	▲***
Producers: Unit labor costs	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Productivity	***	***	***	***	***	▼***	▼***	▼***	▲***
Compounders: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. integrated producers:									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit COGS	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▲***
Research and development expenses	***	***	***	***	***	***	***	***	***
Net assets	***	***	***	***	***	▲***	▲***	▼***	***

Table continued.

Table C-1 Continued
Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, by period

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. compounders:									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Capital expenditures	***	***	***	***	***	▼***	▲***	▼***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▼***	▼***	▲***	***
U.S. integrated producers' and compounders':									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▲***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit COGS	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▼***	▼***	▼***	***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by integrated U.S. producers.
fn3.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires.

Related party exclusion

Table C-2

Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, excluding one U.S compounder *, by period**

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1):									
Included producers and compounder	***	***	***	***	***	▼***	▼***	▼***	▲***
Excluded compounder	***	***	***	***	***	***	***	***	***
All producers and compounders	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. consumption value:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1):									
Included producers and compounder	***	***	***	***	***	▼***	▼***	▲***	▲***
Excluded compounder	***	***	***	***	***	▼***	▼***	***	***
All producers and compounders	***	***	***	***	***	▼***	▼***	▲***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▼***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Subject sources:									
Quantity	6,814	7,223	6,551	3,892	***	▼(3.9)	▲6.0	▼(9.3)	▼***
Value	33,625	32,925	25,197	15,227	***	▼(25.1)	▼(2.1)	▼(23.5)	▼***
Unit value	$4.93	$4.56	$3.85	$3.91	***	▼(22.1)	▼(7.6)	▼(15.6)	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Nonsubject sources:									
Quantity	5,375	4,415	3,418	1,643	***	▼(36.4)	▼(17.9)	▼(22.6)	▲***
Value	39,069	32,880	24,918	12,736	***	▼(36.2)	▼(15.8)	▼(24.2)	▲***
Unit value	$7.27	$7.45	$7.29	$7.75	***	▲0.3	▲2.5	▼(2.1)	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
All import sources:									
Quantity	12,189	11,638	9,970	5,535	***	▼(18.2)	▼(4.5)	▼(14.3)	▲***
Value	72,695	65,805	50,115	27,963	***	▼(31.1)	▼(9.5)	▼(23.8)	▲***
Unit value	$5.96	$5.65	$5.03	$5.05	***	▼(15.7)	▼(5.2)	▼(11.1)	▲***
Ending inventory quantity	3,811	3,587	3,055	3,755	2,648	▼(19.9)	▼(5.9)	▼(14.8)	▼(29.5)

Table continued.

Table C-2 Continued

Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, excluding one U.S compounder *, by period**

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
Included U.S. integrated producers' and compounders':									
Producers: Average capacity quantity	***	***	***	***	***	▲***	▲***	▼***	***
Producers: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Compounders: Average capacity quantity	***	***	***	***	***	***	***	***	***
Compounders: Production quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Compounders: Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
U.S. shipments (fn2):									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Producers: Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Producers: Inv./total shipments (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Inv./total shipments (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
Production workers	***	***	***	***	***	▼***	▼***	▼***	▲***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	▲***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▲***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▲***
Producers: Productivity	***	***	***	***	***	▼***	▼***	▲***	▲***
Producers: Unit labor costs	***	***	***	***	***	▲***	▲***	▼***	▼***
Compounders: Productivity	***	***	***	***	***	▼***	▼***	▼***	▲***
Compounders: Unit labor costs	***	***	***	***	***	▲***	▲***	▲***	▼***
Included U.S. integrated producers:									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit COGS	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▲***
Research and development expenses	***	***	***	***	***	***	***	***	***
Net assets	***	***	***	***	***	▲***	▲***	▼***	***

Table continued.

Table C-2 Continued

Granular PTFE: Summary data concerning the U.S. market including both integrated U.S. producers and standalone U.S. compounders, excluding one U.S compounder *, by period**

Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
Included U.S. compounders:									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▼***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Capital expenditures	***	***	***	***	***	▼***	▲***	▼***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▼***	▼***	▲***	***
Included U.S. integrated producers' and compounders':									
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▲***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit COGS	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▼***	▼***	▲***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▼***
Research and development expenses	***	***	***	***	***	▼***	▼***	▼***	▼***
Net assets	***	***	***	***	***	▼***	▼***	▼***	***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by integrated U.S. producers.

fn3.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires.

Integrated U.S. producers

Table C-3
Granular PTFE: Summary data concerning the U.S. market including only integrated U.S. producers, by period
Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. consumption quantity:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▲***	▼***
U.S. consumption value:									
Amount	***	***	***	***	***	▼***	▼***	▼***	▲***
Producers' share (fn1)	***	***	***	***	***	▼***	▼***	▲***	▲***
Importers' share (fn1):									
India	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources	***	***	***	***	***	▲***	▲***	▼***	▼***
Nonsubject sources	***	***	***	***	***	▼***	▼***	▼***	▲***
All import sources	***	***	***	***	***	▲***	▲***	▼***	▼***
U.S. importers' U.S. shipments of imports from:									
India:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▼***	▼***
Russia:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▼***	▼***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Subject sources:									
Quantity	6,814	7,223	6,551	3,892	***	▼(3.9)	▲6.0	▼(9.3)	▼***
Value	33,625	32,925	25,197	15,227	***	▼(25.1)	▼(2.1)	▼(23.5)	▼***
Unit value	$4.93	$4.56	$3.85	$3.91	***	▼(22.1)	▼(7.6)	▼(15.6)	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▲***	▼***
Nonsubject sources:									
Quantity	5,375	4,415	3,418	1,643	***	▼(36.4)	▼(17.9)	▼(22.6)	▲***
Value	39,069	32,880	24,918	12,736	***	▼(36.2)	▼(15.8)	▼(24.2)	▲***
Unit value	$7.27	$7.45	$7.29	$7.75	***	▲0.3	▲2.5	▼(2.1)	▲***
Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▼***
All import sources:									
Quantity	12,189	11,638	9,970	5,535	***	▼(18.2)	▼(4.5)	▼(14.3)	▲***
Value	72,695	65,805	50,115	27,963	***	▼(31.1)	▼(9.5)	▼(23.8)	▲***
Unit value	$5.96	$5.65	$5.03	$5.05	***	▼(15.7)	▼(5.2)	▼(11.1)	▲***
Ending inventory quantity	3,811	3,587	3,055	3,755	2,648	▼(19.9)	▼(5.9)	▼(14.8)	▼(29.5)

Table continued.

Table C-3 Continued
Granular PTFE: Summary data concerning the U.S. market including only integrated U.S. producers, by period
Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Productivity=pounds dry weight per hour; Period changes=percent--exceptions noted

	Reported data					Period changes			
	Calendar year			Jan-Jun		Comparison years			Jan-Jun
	2018	2019	2020	2020	2021	2018-20	2018-19	2019-20	2020-21
U.S. integrated producers':									
Average capacity quantity	***	***	***	***	***	▲***	▲***	▼***	***
Production quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Capacity utilization (fn1)	***	***	***	***	***	▼***	▼***	▼***	▲***
U.S. shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Export shipments:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▲***	▼***
Ending inventory quantity	***	***	***	***	***	▼***	▼***	▼***	▼***
Inventories/total shipments (fn1)	***	***	***	***	***	▲***	▲***	▼***	▼***
Production workers	***	***	***	***	***	▼***	▼***	▼***	▲***
Hours worked (1,000s)	***	***	***	***	***	▼***	▼***	▼***	▲***
Wages paid ($1,000)	***	***	***	***	***	▼***	▼***	▼***	▲***
Hourly wages (dollars per hour)	***	***	***	***	***	▲***	▲***	▲***	▼***
Productivity	***	***	***	***	***	▼***	▼***	▲***	▲***
Unit labor costs	***	***	***	***	***	▲***	▲***	▼***	▼***
Net sales:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▼***	▼***	▲***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▼***	▼***	▼***	▲***
Gross profit or (loss) (fn2)	***	***	***	***	***	▼***	▼***	▲***	▼***
SG&A expenses	***	***	***	***	***	▼***	▼***	▼***	▲***
Operating income or (loss) (fn2)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss) (fn2)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit COGS	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit SG&A expenses	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit operating income or (loss) (fn2)	***	***	***	***	***	▼***	▼***	▲***	▼***
Unit net income or (loss) (fn2)	***	***	***	***	***	▼***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▼***	▲***	▼***
Capital expenditures	***	***	***	***	***	▼***	▼***	▲***	▲***
Research and development expenses	***	***	***	***	***	***	***	***	***
Net assets	***	***	***	***	***	▲***	▲***	▼***	***

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX D

SUFFICIENT PRODUCTION-RELATED ACTIVITIES BY FIRM

Table D-1
Granular PTFE: U.S. producer 3M's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-2
Granular PTFE: U.S. producer 3M's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Table D-3
Granular PTFE: U.S. producer AGC's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-4
Granular PTFE: U.S. producer AGC's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-5
Granular PTFE: U.S. producer Chemours's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-6
Granular PTFE: U.S. producer Chemours's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-7
Granular PTFE: U.S. producer Daikin's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-8
Granular PTFE: U.S. producer Daikin's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-9
Granular PTFE: U.S. producer Flontech's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-10
Granular PTFE: U.S. producer Flontech's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-11
Granular PTFE: U.S. producer GFL America's narrative explanations relating to its overall domestic production activities and to the sufficient production-related activities factors

Factor	Narrative responses
Domestic production activities description	***
Capital investments	***
Technical expertise	***
Value added	***
Employment	***
Quantity, type and source of parts	***
Costs and activities	***
Rating of complexity	***
Narrative on complexity	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table D-12
Granular PTFE: U.S. producer GFL America's U.S. production, by source of input and by period

Quantity in 1,000 pounds dry weight; Shares in percent

Source of input in production	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Internally produced PTFE	Quantity	***	***	***	***	***
Purchased domestic PTFE	Quantity	***	***	***	***	***
Domestic-origin PTFE	Quantity	***	***	***	***	***
Purchased or imported subject PTFE	Quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Quantity	***	***	***	***	***
All input sources	Quantity	***	***	***	***	***
Internally produced PTFE	Share of quantity	***	***	***	***	***
Purchased domestic PTFE	Share of quantity	***	***	***	***	***
Domestic-origin subassemblies	Share of quantity	***	***	***	***	***
Purchased or imported subject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported nonsubject PTFE	Share of quantity	***	***	***	***	***
Purchased or imported foreign-origin PTFE	Share of quantity	***	***	***	***	***
All input sources	Share of quantity	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-13
Granular PTFE: U.S. producers' capital expenditures and ratio of capital expenditures to production, by firm and period

Values in 1,000 dollars; Ratios in dollars per pound

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	Value	***	***	***	***	***
AGC	Value	***	***	***	***	***
Chemours	Value	***	***	***	***	***
Daikin	Value	***	***	***	***	***
Flontech	Value	***	***	***	***	***
GFL Americas	Value	***	***	***	***	***
All firms	Value	***	***	***	***	***
3M	Ratio	***	***	***	***	***
AGC	Ratio	***	***	***	***	***
Chemours	Ratio	***	***	***	***	***
Daikin	Ratio	***	***	***	***	***
Flontech	Ratio	***	***	***	***	***
GFL Americas	Ratio	***	***	***	***	***
All firms	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-14
Granular PTFE: U.S. producers' net assets and ratio of net assets to production, by firm and period

Values in 1,000 dollars; Ratios in dollars per pound

Firm	Measure	2018	2019	2020
3M	Value	***	***	***
AGC	Value	***	***	***
Chemours	Value	***	***	***
Daikin	Value	***	***	***
Flontech	Value	***	***	***
GFL Americas	Value	***	***	***
All firms	Value	***	***	***
3M	Ratio	***	***	***
AGC	Ratio	***	***	***
Chemours	Ratio	***	***	***
Daikin	Ratio	***	***	***
Flontech	Ratio	***	***	***
GFL Americas	Ratio	***	***	***
All firms	Ratio	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-15
Granular PTFE: U.S. producers' R&D expenses and ratio of R&D expenses to production, by firm and period

Values in 1,000 dollars; Ratios in dollars per pound

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	Value	***	***	***	***	***
AGC	Value	***	***	***	***	***
Chemours	Value	***	***	***	***	***
Daikin	Value	***	***	***	***	***
Flontech	Value	***	***	***	***	***
GFL Americas	Value	***	***	***	***	***
All firms	Value	***	***	***	***	***
3M	Ratio	***	***	***	***	***
AGC	Ratio	***	***	***	***	***
Chemours	Ratio	***	***	***	***	***
Daikin	Ratio	***	***	***	***	***
Flontech	Ratio	***	***	***	***	***
GFL Americas	Ratio	***	***	***	***	***
All firms	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Table D-16
Granular PTFE: U.S. producers' conversion costs

Values in 1,000 dollars; Ratios to COGS in percent; Ratios to production in dollars per pound

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	Value	***	***	***	***	***
AGC	Value	***	***	***	***	***
Chemours	Value	***	***	***	***	***
Daikin	Value	***	***	***	***	***
Flontech	Value	***	***	***	***	***
GFL Americas	Value	***	***	***	***	***
All firms	Value	***	***	***	***	***
3M	Ratio to COGS	***	***	***	***	***
AGC	Ratio to COGS	***	***	***	***	***
Chemours	Ratio to COGS	***	***	***	***	***
Daikin	Ratio to COGS	***	***	***	***	***
Flontech	Ratio to COGS	***	***	***	***	***
GFL Americas	Ratio to COGS	***	***	***	***	***
All firms	Ratio to COGS	***	***	***	***	***
3M	Ratio to Production	***	***	***	***	***
AGC	Ratio to Production	***	***	***	***	***
Chemours	Ratio to Production	***	***	***	***	***
Daikin	Ratio to Production	***	***	***	***	***
Flontech	Ratio to Production	***	***	***	***	***
GFL Americas	Ratio to Production	***	***	***	***	***
All firms	Ratio to Production	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table D-17
Granular PTFE: U.S. producers' employment levels and the ratio of production to number of employees

Quantity in number of employees; Ratios in 1,000 pounds produced per employee

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	Quantity	***	***	***	***	***
AGC	Quantity	***	***	***	***	***
Chemours	Quantity	***	***	***	***	***
Daikin	Quantity	***	***	***	***	***
Flontech	Quantity	***	***	***	***	***
GFL Americas	Quantity	***	***	***	***	***
All firms	Quantity	***	***	***	***	***
3M	Ratio	***	***	***	***	***
AGC	Ratio	***	***	***	***	***
Chemours	Ratio	***	***	***	***	***
Daikin	Ratio	***	***	***	***	***
Flontech	Ratio	***	***	***	***	***
GFL Americas	Ratio	***	***	***	***	***
All firms	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Table D-18
Granular PTFE: U.S. producers' value of domestic raw materials, share of domestic raw materials to total raw materials, and ratio of domestic raw materials to production

Values in 1,000 dollars; Shares in percent; Ratios to production in dollars per pound

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
3M	Value	***	***	***	***	***
AGC	Value	***	***	***	***	***
Flontech	Value	***	***	***	***	***
GFL Americas	Value	***	***	***	***	***
All firms	Value	***	***	***	***	***
3M	Share	***	***	***	***	***
AGC	Share	***	***	***	***	***
Flontech	Share	***	***	***	***	***
GFL Americas	Share	***	***	***	***	***
All firms	Share	***	***	***	***	***
3M	Ratio	***	***	***	***	***
AGC	Ratio	***	***	***	***	***
Flontech	Ratio	***	***	***	***	***
GFL Americas	Ratio	***	***	***	***	***
All firms	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---“. ***.

APPENDIX E

COMPOUNDERS' TRADE DATA WITH RELATED PARTY EXCLUSION EXCLUDING U.S. COMPOUNDER ***

Table E-1
Granular PTFE: U.S. compounders' capacity, production and capacity utilization excluding one U.S. compounder *, by period**

Capacity in 1,000 pounds dry weight, ratios in percent

Firm	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Capacity	Quantity	***	***	***	***	***
Production	Quantity	***	***	***	***	***
Capacity utilization	Ratio	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Figure E-1
Granular PTFE: U.S. compounders' capacity, production and capacity utilization excluding one U.S. compounder *, by period**

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table E-2
Granular PTFE: U.S. compounders' production excluding one U.S. compounder *, by input type**

Quantity in 1,000 pounds dry weight, shares in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production using domestic PTFE	Quantity	***	***	***	***	***
Production using imported subject PTFE	Quantity	***	***	***	***	***
Production using imported nonsubject PTFE	Quantity	***	***	***	***	***
All production	Quantity	***	***	***	***	***
Production using domestic PTFE	Share	***	***	***	***	***
Production using imported subject PTFE	Share	***	***	***	***	***
Production using imported nonsubject PTFE	Share	***	***	***	***	***
All production	Share	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Table E-3
Granular PTFE: U.S. compounders' shipments excluding one U.S. compounder *, by location of shipment and period**

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; unit values in dollars per pound dry weight; shares in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. shipments	Quantity	***	***	***	***	***
Export shipments	Quantity	***	***	***	***	***
Total shipments	Quantity	***	***	***	***	***
U.S. shipments	Value	***	***	***	***	***
Export shipments	Value	***	***	***	***	***
Total shipments	Value	***	***	***	***	***
U.S. shipments	Unit value	***	***	***	***	***
Export shipments	Unit value	***	***	***	***	***
Total shipments	Unit value	***	***	***	***	***
U.S. shipments	Share of quantity	***	***	***	***	***
Export shipments	Share of quantity	***	***	***	***	***
Total shipments	Share of quantity	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

Table E-4
Granular PTFE: U.S. producers' U.S. shipments for use in apparent consumption excluding one U.S. compounder *, by period**

Quantity in 1,000 pounds dry weight; value in 1,000 dollars

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
U.S. shipments	Quantity	***	***	***	***	***
U.S. shipments fully domestic	Value	***	***	***	***	***
U.S. shipments value added to imports	Value	***	***	***	***	***
U.S. shipments total	Value	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value-added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by U.S. producers.

Table E-5
Granular PTFE: U.S. compounders' inventories and inventory ratios excluding one U.S. compounder *, by period**

Quantity in 1,000 pounds dry weight; inventory ratios in percent

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
End-of-period inventory quantity	***	***	***	***	***
Inventory ratio to U.S. production	***	***	***	***	***
Inventory ratio to U.S. shipments	***	***	***	***	***
Inventory ratio to total shipments	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Table E-6
Granular PTFE: U.S. compounders' employment related data excluding U.S. compounder *, by period**

Item	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Production and related workers (PRWs) (number)	***	***	***	***	***
Total hours worked (1,000 hours)	***	***	***	***	***
Hours worked per PRW (hours)	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***
Unit labor costs (dollars per pound)	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires

Table E-7
Granular PTFE: Apparent U.S. consumption, excluding U.S. compounder *, by source and by period**

Quantity in 1,000 pounds dry weight; value in 1,000 dollars

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Included U.S. producers and compounders	Quantity	***	***	***	***	***
Excluded U.S. compounder	Quantity	***	***	***	***	***
All U.S. producers and compounders	Quantity	***	***	***	***	***
India	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
All sources	Quantity	***	***	***	***	***
Included U.S. producers and compounders	Value	***	***	***	***	***
Excluded U.S. compounder	Value	***	***	***	***	***
All U.S. producers and compounders	Value	***	***	***	***	***
India	Value	***	***	***	***	***
Russia	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	***	***	***	***	***
All import sources	Value	***	***	***	***	***
All sources	Value	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Quantity for U.S. producers' U.S. shipments reflects integrated U.S. producers' shipment quantities. Value for U.S. producers' U.S. shipments reflects PTFE sold in the United States from domestically manufactured PTFE (including the value added by U.S. compounders to domestic PTFE), as well as the value added by U.S. compounders to imported PTFE. Quantity data reflects PTFE on an unfilled, uncompounded basis while the value-added data includes the value of additional non-PTFE material inputs as well as conversion costs and profits of compounders. In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported as an import or as a shipment to compounders by U.S. producers.

Table E-8
Granular PTFE: Market shares, excluding U.S. compounder *, by source and by period**

Shares in percent

Source	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Included U.S. producers and compounders	Share of quantity	***	***	***	***	***
Excluded U.S. compounder	Share of quantity	***	***	***	***	***
All U.S. producers and compounders	Share of quantity	***	***	***	***	***
India	Share of quantity	***	***	***	***	***
Russia	Share of quantity	***	***	***	***	***
Subject sources	Share of quantity	***	***	***	***	***
Nonsubject sources	Share of quantity	***	***	***	***	***
All import sources	Share of quantity	***	***	***	***	***
All sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
Included U.S. producers and compounders	Share of value	***	***	***	***	***
Excluded U.S. compounder	Share of value	***	***	***	***	***
All U.S. producers and compounders	Share of value	***	***	***	***	***
India	Share of value	***	***	***	***	***
Russia	Share of value	***	***	***	***	***
Subject sources	Share of value	***	***	***	***	***
Nonsubject sources	Share of value	***	***	***	***	***
All import sources	Share of value	***	***	***	***	***
All sources	Share of value	100.0	100.0	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX F

APPENDIX FOR PART VI

Figure F-1
Granular PTFE: Share of net sales quantity of U.S. integrated producers and U.S. compounders in 2020, by firm

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires.

Table F-1
Granular PTFE: Results of consolidated operations of U.S. integrated producers and U.S. compounders, by item and period

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
Raw material costs	Value	***	***	***	***	***
Direct labor costs	Value	***	***	***	***	***
Other factory costs	Value	***	***	***	***	***
COGS	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Estimated cash flow from operations	Value	***	***	***	***	***
Raw material costs	Ratio to NS	***	***	***	***	***
Direct labor costs	Ratio to NS	***	***	***	***	***
Other factory costs	Ratio to NS	***	***	***	***	***
COGS	Ratio to NS	***	***	***	***	***
Gross profit or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table F-1 Continued
Granular PTFE: Results of consolidated operations of U.S. integrated producers and U.S. compounders, by item and period

Shares in percent; unit values in dollars per pound dry weight; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Raw material costs	Share	***	***	***	***	***
Direct labor costs	Share	***	***	***	***	***
Other factory costs	Share	***	***	***	***	***
COGS	Share	***	***	***	***	***
Total net sales	Unit value	***	***	***	***	***
Raw material costs	Unit value	***	***	***	***	***
Direct labor costs	Unit value	***	***	***	***	***
Other factory costs	Unit value	***	***	***	***	***
Cost of goods sold	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Ratios represent the ratio to net sales value and shares represent the share of COGS.

Table F-2
Granular PTFE: Firm-by-firm total net sales quantity, by period

Net sales quantity

Quantity in 1,000 pounds dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm total net sales value, by period

Net sales value

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm cost of goods sold ("COGS"), by period

COGS

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm gross profit or (loss), by period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm selling, general, and administrative ("SG&A") expenses, by period

SG&A expenses

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm operating income or (loss), by period

Operating income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm net income or (loss), by period

Net income or (loss)

Value in 1,000 dollars

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm ratio of COGS to net sales value, by period

COGS to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm ratio of gross profit or (loss) to net sales value, by period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm ratio of SG&A expenses to net sales value, by period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm ratio of operating income or (loss) to net sales value, by period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm ratio of net income or (loss) to net sales value, by period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit net sales value, by period

Unit net sales value

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit raw material cost, by period

Unit raw material costs

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit direct labor cost, by period

Unit direct labor costs

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit other factory costs, by period

Unit other factory costs

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit COGS, by period

Unit COGS

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit gross profit or (loss), by period

Unit gross profit or (loss)

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit SG&A expenses, by period

Unit SG&A expenses

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit operating income or (loss), by period

Unit operating income or (loss)

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table F-2 Continued
Granular PTFE: Firm-by-firm unit net income or (loss), by period

Unit net income or (loss)

Unit values in dollars per pound dry weight

Firm	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Chemours	***	***	***	***	***
Daikin	***	***	***	***	***
U.S. integrated producers	***	***	***	***	***
3M	***	***	***	***	***
AGC	***	***	***	***	***
Flontech	***	***	***	***	***
GFL Americas	***	***	***	***	***
U.S. compounders	***	***	***	***	***
All firms	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX G

U.S. INTEGRATED PRODUCERS' AND U.S. COMPOUNDERS' FINANCIAL DATA EXCLUDING ONE U.S. COMPOUNDER ***

Table G-1
Granular PTFE: Results of consolidated operations of U.S. integrated producers and U.S. compounders, excluding one U.S. compounder *, by item and period**

Quantity in 1,000 pounds dry weight; value in 1,000 dollars; ratios in percent

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Total net sales	Quantity	***	***	***	***	***
Total net sales	Value	***	***	***	***	***
Raw material costs	Value	***	***	***	***	***
Direct labor costs	Value	***	***	***	***	***
Other factory costs	Value	***	***	***	***	***
COGS	Value	***	***	***	***	***
Gross profit or (loss)	Value	***	***	***	***	***
SG&A expenses	Value	***	***	***	***	***
Operating income or (loss)	Value	***	***	***	***	***
Interest expense	Value	***	***	***	***	***
All other expenses	Value	***	***	***	***	***
All other income	Value	***	***	***	***	***
Net income or (loss)	Value	***	***	***	***	***
Depreciation/amortization	Value	***	***	***	***	***
Estimated cash flow from operations	Value	***	***	***	***	***
Raw material costs	Ratio to NS	***	***	***	***	***
Direct labor costs	Ratio to NS	***	***	***	***	***
Other factory costs	Ratio to NS	***	***	***	***	***
COGS	Ratio to NS	***	***	***	***	***
Gross profit or (loss)	Ratio to NS	***	***	***	***	***
SG&A expenses	Ratio to NS	***	***	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***	***	***
Net income or (loss)	Ratio to NS	***	***	***	***	***

Table continued.

Table G-1 Continued
Granular PTFE: Results of consolidated operations of U.S. integrated producers and U.S. compounders, excluding one U.S. compounder *, by item and period**

Shares in percent; unit values in dollars per pound dry weight; count in number of firms reporting

Item	Measure	2018	2019	2020	Jan-Jun 2020	Jan-Jun 2021
Raw material costs	Share	***	***	***	***	***
Direct labor costs	Share	***	***	***	***	***
Other factory costs	Share	***	***	***	***	***
COGS	Share	***	***	***	***	***
Total net sales	Unit value	***	***	***	***	***
Raw material costs	Unit value	***	***	***	***	***
Direct labor costs	Unit value	***	***	***	***	***
Other factory costs	Unit value	***	***	***	***	***
Cost of goods sold	Unit value	***	***	***	***	***
Gross profit or (loss)	Unit value	***	***	***	***	***
SG&A expenses	Unit value	***	***	***	***	***
Operating income or (loss)	Unit value	***	***	***	***	***
Net income or (loss)	Unit value	***	***	***	***	***
Operating losses	Count	***	***	***	***	***
Net losses	Count	***	***	***	***	***
Data	Count	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires.

Note: Ratios represent the ratio to net sales value and shares represent the share of COGS.